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ABSTRACT

This is a report on the first year of the Brookline Early Education Project (BEEP), a program that delivers both diagnostic and educational services to one hundred twenty-seven families who have had or expected to have babies in 1973. It has opened a parent resource center, trained a staff of individuals from different professions, worked to inform its target communities of its purposes and services. Among the objectives of the program are: to provide diagnostic and educational services to the family throughout their child's preschool years, to evaluate the benefits and cost effectiveness of these services, to determine the value of the various diagnostic procedures in predicting later learning and health problems, and to determine whether a public school, pediatric center and a graduate school of education can develop new ways of working together to raise the quality of diagnostic and educational services for young children and their families. Included in the document are descriptions of the diagnostic program, the education program, the evaluation program, family enrollment and outreach efforts. Appendices include information on a toy lending library. (Author/MS)

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THE BROOKLINE PROGRAM FOR INFANTS AND THEIR FAMILIES:

The First Operational Year

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Donald E. Pierson
Director

October 16, 1973

PS 009107

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THE BROOKLINE PROGRAM FOR INFANTS AND THEIR FAMILIES:

THE FIRST OPERATIONAL YEAR

INTRODUCTION

The Brookline Early Education Project (BEEP) is now completing the first year of its grant period. It is delivering both diagnostic and educational services to one hundred twenty-seven families who have had or expect to have babies in 1973. It has opened a parent resource center, trained a staff of individuals from different professions, worked to inform its target communities of its purposes and services.

In reviewing the events of this first operational year, we want to describe the paths we have taken, the services we are actually providing, the problems we have encountered, and the successes we have had. We want also to appraise the interactions among the collaborating institutions and the relations between BEEP and its various "publics."

To summarize its objectives briefly, the Brookline Project was designed:

- to provide diagnostic and educational services to the family throughout their child's preschool years,
- to evaluate the benefits of these services and to assess the comparative value of educational programs that vary in intensity and cost,
- to determine the value of the various diagnostic procedures, both singly and in combination, in predicting later learning and health problems,
- to document the history of the project, its successes and failures so that other communities can build on our experiences,
- to determine whether a public school, pediatric center and a graduate school of education can develop new ways of working together to raise the quality of diagnostic and educational services for young children and their families,
- to determine how such a program of diagnosis and education is received by various elements of the community -- by parents, school teachers, family doctors, local pediatricians, community agencies, and the general citizenry.

This report of the year's progress is organized around the following headings:

Transition
Staffing
Center
Diagnostic Program
Educational Program
Program Evaluation
Family Recruitment
Outreach Efforts
Public Response
Major Concern
Significant Accomplishments
The Year Ahead
Appendix

TRANSITION

As BEEP's planning year drew to a close, prospects for operational funding were sufficiently bright to warrant continuation of preliminary preparations. Members of the school department and a small BEEP staff provided continuity through limbo months of waiting. Potential candidates for staff positions were screened and tentative arrangements were made with those best qualified.

In early September, 1972, Dr. Donald E. Pierson was appointed Director of the project. He had a Harvard doctorate in human development and education, and was experienced as a public school administrator. He began work at once on a part-time basis and by November 1 he had discharged the last of his previous commitments as principal of the Brook School, Weston Public Schools, Weston, Massachusetts. Since then he has devoted full time to directing the project.

Dr. Pierson's first efforts were concerned with raising the funds required to put both the diagnostic and educational programs of the project into operation simultaneously. At the same time he began to survey possible sites for project headquarters and to estimate requirements for equipment and supplies needed to set the programs into operation.

STAFFING

With the announcement on September 29, 1972, that the Robert Wood Johnson Foundation had granted $400,000 for support of a two-year operational period, staff hiring began at once.

The process of building an organization while simultaneously turning a complex plan into a functioning reality was facilitated by the fact that BEEP had been able to retain a small cadre of experienced staff members from the planning period. They assumed major roles in operational policy decisions, in orienting new staff members, and in

planning and equipping the BEEP Center.

An experienced staff member and a key consultant from the planning period were engaged to head two of the major program areas. Mrs. Mary-Jane Yurchak, who had directed the planning of BEEP's educational programs, became Supervisor of the Educational Program for infants and their parents. Mr. Anthony Bryk, who had contributed to evaluation planning was appointed Supervisor of Program Evaluation.

The Supervisor of the Diagnostic Program was Mrs. Marian Hainsworth, clinical psychologist who had worked extensively in the areas of early detection and program development for young children with learning problems.

Dr. Melvin D. Levine, Director of the Medical Outpatient Department of the Children's Hospital Medical Center, became the Pediatric Coordinator for BEEP. He assumed responsibility for all medical aspects of the BEEP operation. (Short biographical sketches showing staff members' qualifications are given in the appendix.)

These program leaders immediately began recruiting and training their staffs. More will be said about staff training later in the separate sections that describe each program area.

The BEEP organization was formed around the program areas and an administrative division. Figures 1 and 2 show the BEEP staff as it existed on March 1 and also on October 1, 1973.

The professionals in the right-hand column of Figures 1 and 2 constitute a group of advisors who serve BEEP on a continuing basis. They are frequently called upon to advise in areas of their special expertise or to join in deliberations on long-term policy and program planning.

Several students from local universities are working at BEEP in order to fulfill course requirements for practicum experience in their special fields. Their work loads at BEEP vary from ten hours a week to full time; these students have become a valuable adjunct to the staff and are shown in the organization chart. Other universities interested in strengthening their early education programs have requested similar arrangements for their students. While we feel a commitment to acquainting students with the new model of collaboration between the medical and educational fields, our limited space and other demands on the staff make it necessary to restrict the number of students we accept each semester.

The BEEP organization is supplemented by an important Professional Advisory Committee of Brookline and Boston citizens whose daily work is concerned with the well-being of children. This volunteer group has played a significant role in advising on local resources, policy questions, and recruiting strategies. A subcommittee of physicians worked to enlist

Fig. 1. BEEP STAFF AS OF MARCH 1, 1973

Director - Donald E. Pierson, Ph.D.

Superintendent of Schools - Robert I. Sperber, Ed.D.

Educational Program:

Mary Jane Yurchak,
Supervisor

Marianne Kohn,
Home Visitor

Pamela McClain,
Home Visitor

Marsha Rogers,
Home Visitor

Alicia Ruiz,
Home Visitor

Gail Wolfson,
Home Visitor

Doreen Beinart,
Education student
Harvard University

Diagnostic - Pediatric Program:

Marian Hainsworth,
Supervisor

Diana Kronstadt, Ed.D.
Developmental
Evaluator

Melvin Levine, M.D.
Pediatric Coordinator

Dorothea Johnson, R.N.
Public Health Nurse

Joel Bass, M.D.
Pediatrician

Paul McCarthy, M.D.
Pediatrician

Kathleen Gallagher,
Nursing student
Northeastern
University

Research Program:

Anthony Bryk,
Supervisor

Virginia Neaher,
Research Student
(Wheelock College)

Jean Ehrenberg
Research student
(Harvard University)

Administration:

Sue Weller,
Administrative Assistant

Elizabeth Nicol, Ph.D.
Historian/Disseminator

Linda Solomon,
Secretary/Receptionist

Cheryl Whitfield,
Parent Coordinator

Marianne Büttner,
Community Relations,
Professional Contacts

Maurice Sagoff,
Community Relations,
Publicity

Consultants/Advisors:

Burton White, Ph.D.
Senior Consultant
(Harvard Grad Sch of Ed)

Francis McKenzie, Ph.D.
(Coordinator of Brookline
Pupil Personnel Services)

Larry Dougherty, Ed.D.
Director of Liaisons with
Brookline Schools

George A. Lamb, M.D.
(Children's Hosp. Med. Center
Community Child Health Div.)

Armando Martinez,
Community Consultant
(Fundacion Puente, Inc.)

Robert Hayden,
Community Consultant
(Educational Develmt Corp.)

Irving Williams, M.D.
Pediatric Consultant
(Medical Director of the
Martha Eliot Health Center)

Fig. 2. BEEP STAFF AS OF OCTOBER 1, 1973

Director - Donald E. Pierson, Ph.D.

Superintendent of Schools - Robert I. Sperber, Ed.D.

Educational Program:

MaryJane Yurchak
Supervisor

Ana Acevedo
Teacher

Marianne Büttner
Teacher

Barbara Curry
Teacher

Marianne Kohn
Teacher

Pamela McClain
Teacher

Marsha Rogers
Teacher

Gail Wolfson
Teacher

Thomas Perez
Psychologist

Barbara Murphy
Center Teacher

Diagnostic - Pediatric Program:

Diana Kronstadt, Ed.D.
Supervisor

Ruth Wolman
Devel. Evaluator

Melvin Levine, M.D.
Pediatric Coordinator

Dorothea Johnson, R.N.
Public Health Nurse

Joel Bass, M.D.
Pediatrician

Paul McCarthy, M.D.
Pediatrician

Sandra Niemi, M.D.
Pediatrician

Program Evaluation:

Anthony Bryk
Supervisor

Sue Ryan
Ass't. Supervisor

Student Assistants

Judith Black
(Wheelock College)

Virginia DeLoca
(U Mass, Boston)

Cheryl Liang
(Simmons College)

Martha Niebanck
(Boston Univ.)

Sandra White
(Lesley College)

Carolyn Alper
(Brookline High Sch.)

Administration:

Maureen Rooney
Senior Secretary

Linda Solomon
Secretary

Cheryl Whitfield
Parent Coordinator

Elizabeth Nicol, Ph.D.
Historian

Don Lombardi
Chauffeur/Custodian

Susan Brown
Martha Eliot Liaison

Sandra Linn
Community Relations

Consultants/Advisors,Con't.

Marian Hainsworth
Diagnostic Program Consultant
(Project First Step)

T. Berry Brazelton, M.D. and
Daniel Rosenn, M.D.
Diagnostic Program Consultants
(Children's Hosp. Med. Center)

Consultants/Advisors:

Burton White, Ph.D.
Senior Consultant
(Harvard Grad. Sch. of Ed.)

Francis McKenzie, Ph.D.
Senior Advisor
(Brookline Public Schools)

Larry Dougherty, Ed.D.
School Liaison
(Brookline Public Schools)

George Lamb, M.D.
Senior Medical Advisor
(Children's Hosp. Med. Center)

Cynthia Ross
Nursing Advisor
(Children's Hosp. Med. Center)

Armando Martinez
Community Consultant
(Fundacion Puente)

Robert Hayden
Community Consultant
(Educ'l. Development Corp.)

Irving Williams, M.D.
Pediatric Consultant
(Martha Eliot Health Center)

I-5

the cooperation of pediatricians and family doctors in recommending BEEP to their patients. The names of those who serve on the Professional Advisory Committee this year are shown in the appendix.

The functions of the staff in each of the major areas are as follows:

Educational Program Staff (all are trained in early childhood education and are themselves parents):

- initial interviewing of BEEP families, recording of vital statistics
- preparation and presentation of parent seminars
- design and conduct of individualized educational programs for each family enrolled in the home-visiting service
- supervision of child care in the Center nursery
- design and upkeep of model areas in the Center that demonstrate ways of providing a stimulating yet safe home environment for young children
- documentation of each family's participation in BEEP programs
- selection and supervision of educational materials (books, films, toys) for the loan center.

Diagnostic-Pediatric Program Staff (all are trained either in pediatrics, public health nursing, or in the evaluation of early human development):

- periodic administration of physical examinations to BEEP children and to children in comparison groups
- assessment of growth patterns and developmental status of BEEP babies and comparison children at prescribed intervals
- reporting the results of examinations to parents
- maintenance of up-to-date records on the medical history of each child and family
- compiling and maintaining a directory of medical resources and special treatment centers in the greater Boston area
- providing a referral service for families that will facilitate their locating special medical help should the need be detected in BEEP's diagnostic program
- maintaining liaison and sharing medical information with the pediatricians and family doctors of BEEP children.

Evaluation Program Staff

- development of evaluation plans and comparative studies designed to isolate effects of components of BEEP programs
- close supervision of data records being compiled by other BEEP programs
- recording and organizing information collected on many aspects of project operations that will be required later to evaluate BEEP's interactions with the medical and educational institutions, and with the local community
- collection of data on the functions performed by each staff person per week so that cost-benefit analyses can isolate the information about each program's expenses and effects.

Administration and Community Relations

- performing general administrative and support services, including accounting, payroll, procurement, housekeeping, secretarial, etc.
- coordinating the scheduling of Center-based activities, infant examinations, parent seminars, etc.
- preparation and dissemination of news releases concerning BEEP events
- documentation of the course of BEEP history, tracking major influences, successful and unsuccessful strategies, patterns of interaction among collaborating institutions, evidence of impact on other communities and on training in the medical and educational fields
- providing an information service responding to requests from professionals and general inquirers about BEEP program details
- preparation and distribution of both general and technical articles and reports on BEEP's objectives, procedures, rationale and so on
- general public relations work to enlist the cooperation of community agencies and schools in recruiting families for the BEEP program
- community relations and recruiting activities among various facets of the Brookline community
- community relations and recruiting activities among Boston neighborhoods
- arranging transportation for BEEP families to attend Center events.

THE BEEP CENTER

With the notification on December 28, 1972, that the Carnegie Corporation of New York had awarded $350,000 to the project, the final phase of preparing for the enrollment of families began. The second floor of a brick building, formerly a spacious home, was leased. It is conveniently located near the town shopping center, public transportation, and municipal parking lots.

Because BEEP operates as a unit of the public school system, all of its equipment and furnishings had to be procured through the procedures and channels stipulated by the town purchasing department. The project's headquarters and its furnishings had to meet the fire and safety standards established for schools.

The Center at 40 Centre Street was arranged to provide:

- a parents' lounge where some education programs and many informal contacts among families take place,
- a playroom, well stocked with cribs for visiting babies and with toys for the preschool siblings who accompany BEEP parents to the Center,
- a kitchen which serves the usual functions of kitchens but which also doubles as a place for workshops and as an informal spot where mothers may get acquainted over a snack,
- a diagnostic room equipped for infant physical and developmental examinations,
- a toy and learning resource center with a collection of toys, books, pamphlets and some baby equipment items that parents may borrow to use at home,

- a professional library of books, periodicals and reprints on early childhood, preschool education programs, child care and pediatrics--assembled primarily for staff but open to parents, students and professionals as well,
- a collection of video tapes of BEEP procedures and examinations, and a library of films and slides on topics in early childhood and pediatrics,
- project headquarters and central files,
- staff office space,
- a conference room equipped with audiovisual facilities.

The public rooms of the Center have been planned to demonstrate ways of making home living areas safe yet stimulating places for young children to explore. The planning was generally done by a consensus of the staff and particularly benefitted from the ingenuity and expertise of the Project Historian.

A sketch of the layout of the Center rooms and their main use is shown in Figure 3. Most rooms have been arranged to serve multiple purposes when necessary; thus it is not unusual to find sleeping babies in cribs in the kitchen or in the director's office, away from the noise of their preschool brothers and sisters in the playroom.

The Center has been designed with the intention of making it a warm and welcoming place that families will use as a base from which to develop new ideas, gain new knowledge, and make new friends.

Because the resources and uses of the Center are so intimately linked to the services of the Education Program, more will be said about them in the later section devoted entirely to the Education Program.

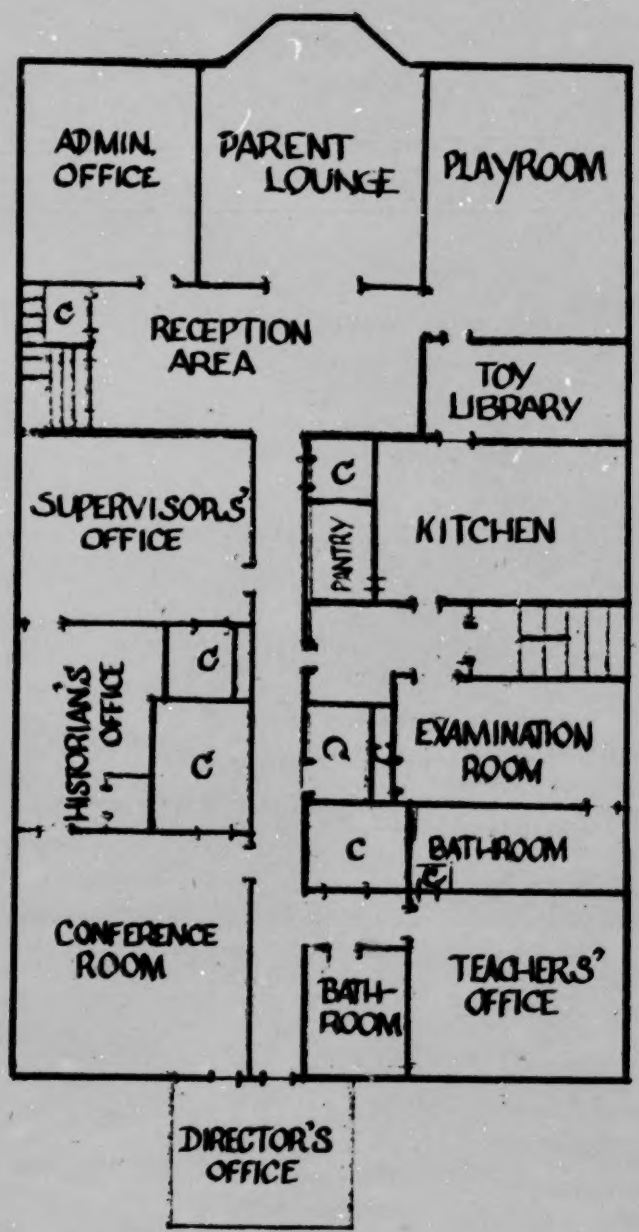

Fig. 3 - Floor plan of the BEEP Center showing the layout of the rooms and their main use. Scale: ¼ inch = 1 foot.

THE DIAGNOSTIC PROGRAM

Introduction

A later section will describe the fortunate circumstances that enabled pediatricians from Children's Hospital Medical Center to take a much larger role in BEEP's Diagnostic Program than had been envisioned during the planning period.

As a result of this expanded collaboration, the diagnostic batteries have been considerably modified and extended by the incorporation of important pediatric material. In several areas of concern where diagnostic tools or inventories were either nonexistent or inadequate, new instruments have been devised by the diagnostic-pediatric staff. During this period also the precise medical procedures to be followed in the physical examinations of children at each age were worked out and standardized.

Documents are being prepared to show the rationale, the background evidence and procedural details of important aspects of the comprehensive Diagnostic Program. The first of these to be completed is "The Assessment of Medical Predisposition to Educational Dysfunction: A Progress Report on the Development of Early Life 'At Risk Inventories' in the Brookline Early Education Project," by Melvin D. Levine, M.D., BEEP's Pediatric Coordinator. (Copies available on request.)

Apart from its diagnostic procedures, the Diagnostic Program is important to the history of joint medical-educational projects because it is the major forum for interaction and collaboration among members of different professions. A part of BEEP's mission is to document the growth of understanding among the professions represented on its staff. The history of the project will record how psychologists, educators, pediatricians, nurses, and other medical specialists have worked together:

- to understand one another's viewpoint and areas of competence,
- to refine the diagnostic batteries appropriate for each age group,
- to establish standardized procedures for administering the infant examinations,
- to train staff members to administer and record tests with reliability,
- to learn how to present their findings in understandable terms for the guidance of parents and of the educational staff who work with each family.

Before outlining the details of the diagnostic examinations of the children, we summarize briefly the qualifications and training of the staff who are responsible for the batteries and for their administration.

Staff

The Diagnostic Program is staffed by two general types of professionals: 1) psychologists who specialize in early childhood development, and 2) pediatricians and a public health nurse.

BEEP's psychologists bring to the project background experience in these areas: design of diagnostic instruments, administration and interpretation of standardized procedures for evaluating developmental progress in young children, evaluation of children with learning handicaps, design of remedial education programs for preschool children, research into the relation of birth stress factors to later educational problems.

In the Diagnostic Program, psychologists have been concerned primarily with the design of the diagnostic batteries, the selection of their content, the standardization of procedures and recording methods, administration of developmental tests to BEEP children and to comparison subjects, participation with the nurse and pediatricians in the case conferences that follow each examination and in any referral recommendations that emerge, and conferring with parents about examination results. They are also engaged in staff training and in reliability studies.

BEEP's medical team is provided by Children's Hospital Medical Center through its Division of Community Child Health. Postgraduate fellowships to pediatricians who have completed pediatric residencies enable them to gain special experience in community settings -- such as school health departments, juvenile courts, neighborhood health clinics, and adolescent youth centers. Each of the three pediatric fellows spends about half of the work week at the Brookline Early Education Project. They administer the physical examinations to the BEEP infants. Their work is supervised by the Pediatric Coordinator who is also the Associate Director of the Division of Community Child Health at Children's Hospital.

A great deal of care has been taken to build reliability into the examinations and into the record-taking process. Videotaping of the pediatricians giving the various examinations facilitates the standardization process. For certain procedures, the pediatricians receive training from specialists in the particular area.

A full-time public health nurse completes the medical team provided by arrangement with Children's Hospital. She is active in developing an on-going relationship with each family in BEEP. She interviews the family at home, performs certain assessments of the newborn child, and records interim medical histories.

The pediatric team and the psychologists who are developmental evaluators work together in examining each child. How they interact, share information, and reach a composite evaluation will be described in the following sections.

The Pediatric Coordinator holds weekly conferences with the diagnostic team and is available on an on-going basis for any problems or questions that develop. While these conferences are concerned primarily with the health and well-being of a child, they also serve a continuing education function and assure that staff procedures remain consistent with established standards.

Rationale for the Diagnostic Program

A child or infant who is not functioning adequately from a developmental point of view is, in a broad sense, an unhealthy child. Conversely, a youngster whose body is found to be unhealthy may not be functioning optimally from a developmental point of view. In the Brookline Early Education Project, the health of a baby can be regarded as one access to his functional capacity, while developmental progress may represent a partial reflection or correlate of neurological state and perhaps of physical health in general.

The medical perspective in the BEEP Diagnostic Program provides an access to the infant's bodily function, the conditions or events which modify such function, while the psychological perspective focusses on the integrated behavior patterns that the infant is developing in interacting with the environment.

The central concept in BEEP's diagnostic strategy is that the total picture of the child is best captured in the melding of medical and developmental information. Through their joint observation and sharing of insights about the child through the preschool years, the pediatrician and the developmental psychologist may better come to understand the forces that shape the child's future educability.

Design of the Diagnostic Program

The Diagnostic Program consists of two basic sections:

1. The Initial Diagnostic Battery: This battery gathers basic information on the family, on the medical and psychological aspects of this pregnancy and birth. In addition, a thorough physical examination yields information on the status of the basic physical, neurological and behavioral systems of the baby at two weeks of age. One of the major goals of the battery is to provide a baseline description of the child's physical endowment at birth plus a record of the genetic, environmental and health stresses that may affect him.

2. Health, Growth, and Developmental Reviews: At 3½, 6½, 11½, 14½, 24 and 30 months, examinations are given to assess the child's health and his developmental progress. Special attention is paid to those areas and skills which seem particularly diagnostic of incipient educational handicap. The basic strategy is to be responsive to even minor but persistent weaknesses in the areas of development that are potentially predictive of later learning problems.

The content and administration of each of these diagnostic evaluations are described briefly in the next sections. (Detailed reports on the BEEP programs are in preparation and will be issued separately.)

The Initial Diagnostic Battery

Through a series of interviews with the parents at home and in the BEEP Center, basic information about the family is collected. This includes: medical history of family members, occupation and educational background, parents' attitudes about the pregnancy and their expectations concerning the new baby's effect on the family.

The pediatric assessment of an infant begins during the gestational period. The public health nurse interviews the mother and reviews with her the history of this and previous pregnancies in order to record any events or conditions which seem likely to bear on the future learning capacity of the child.

The public health nurse completes a prenatal medical inventory before each infant is born, This inventory includes information about the mother's age, parity, previous pregnancies, her nutritional status, illness or medications taken during pregnancy, as well as some information about the behavior of the fetus in utero.

The prenatal inventory is scored on a scale in which individual items are weighted depending upon their likelihood of contributing to a learning problem, and also upon the severity of the condition under consideration. From this system, a prenatal medical at-risk score is obtained. This at-risk score does not include such areas as psychological state, social factors, and family educational history. These parameters are considered in other portions of the overall Diagnostic Program.

From birth on, the emphasis shifts to the baby, the events and conditions surrounding birth, success in adapting to the routine of the new life, and assessments of the child's medical and behavioral status.

At the age of two weeks, another medical inventory is completed by the public health nurse. This postnatal inventory considers details of the labor and delivery, the condition of the newborn at birth, and the state of the newborn during the first two weeks of life. The information is obtained, with parents' permission, from the hospital birth records on mother and the infant. In this inventory, such events as Cesarean Section, prolonged labor, premature rupture of the membranes, malpresentation, birth trauma, fetal distress, congenital anomalies, jaundice, respiratory distress, and early illness are documented.

The factors are weighted in a manner similar to that of the prenatal inventory, and a score is determined for the infant. (The rationale for these prenatal and postnatal medical inventories is given in Dr. Levine's article, previously mentioned.)

In addition to the collection of medical information through prenatal and postnatal inventories, the Initial Diagnostic Battery includes physical examinations of the child. The first of these, at seven or ten days of age, is the Brazelton Neonatal Behavioral Assessment, performed in the home by the public health nurse who has been trained by Dr. Brazelton and his associates.

This early evaluation attempts to describe the infant's behavioral organization, emotional responsiveness, sensory acuity, general motor function, and reflexes. The Brazelton assessment is regarded as a tool for elucidating an organized description of the infant's behavior and characteristic responses to the environment. While the predictive capability of this assessment will not be apparent until the children are older, we do know that the infant's performance on this early exam provides an interesting topic for increasing parent understanding of the newborn's abilities.

Because of the relation of neurologic functioning to mental development, an extensive search was made for the best available neurological screening procedures. In the United States we found no reliable techniques in use for detecting borderline neurologic deficits in the early days of life. In Holland, however, Dr. Heinz Prechtl* has developed a neurological examination to be given in the second week of life and has used it with over 1500 infants, some of whom he has continued to monitor for ten years. Follow-up studies of this Prechtl examination have presented evidence of its value in predicting later learning and behavior problems. It has some validation with respect to its ability to identify infants who have a strong probability of becoming hyperkinetic children as well as those who might later become somewhat slow and apathetic. For these reasons, the Prechtl Newborn Neurologic Examination is included in BEEP's Initial Diagnostic Battery. (A copy of the information that parents receive about the Prechtl examination is included in the appendix.)

The Newborn Neurologic Examination is administered at the BEEP Center when the infant is 14 days old or as soon after as possible. Parents are invited to observe the examination and are given literature about the procedures. The examination is administered by the pediatric fellows who have received special training from a developmental psychologist who studied and worked with Dr. Prechtl.

The staff of the Brookline Early Education Project as well as the parents of children in the program have been briefed on the limitations of the Prechtl examination. For the most part, discrepancies in the Prechtl examination are recorded and followed in future evaluations. It is generally understood that only very gross abnormalities require any kind of immediate intervention.

A thorough physical examination of each infant is also performed

*Prechtl, H. and Beintema, D. The Neurological Examination of the Full-Term Newborn Infant. London: Heineman, 1964.

at the age of two weeks. The physical examination emphasizes those aspects of the newborn's health which may be most relevant to future learning ability. Careful recording of head circumference, transillumination of the head, size of the fontanelles, appearance of the optic fundi, are some of the observations that are made with particular care.

The final item in the Initial Diagnostic Battery is the history of the baby's sleep and feeding patterns. Several lines of evidence and experience led us to feel that early difficulties in sleeping and feeding might be predictive of later problems of self regulation. Consequently we developed a sleep and feeding questionnaire which is completed by the mother at regular intervals, beginning at the two week initial diagnostic examination and continuing through the 6½ month examination. This inventory attempts to document the consistency of the child's sleep and feeding patterns, as well as to focus on the mother's expectations and on the impact of the child's sleep and feeding patterns on the family.

Immediately following the two-week examination, the pediatrician, the public health nurse and the teacher assigned to the family bring their information together for a brief review and evaluation. The pediatrician and the nurse then discuss results of the examination with the waiting parents.

Table 1 summarizes the content of the Initial Diagnostic Battery, the instruments chosen or constructed to elicit the information and the personnel who are responsible for each aspect of the evaluation.

The Initial Diagnostic Battery is seen as a baseline description of the child as he arrives in this world and before social, environmental, psychological and medical influences have begun to play on the child. Five basic classes of information are brought together by this battery:

1. pregnancy signs derived from the mother's health history and report of potential stresses throughout the pregnancy;

2. conditions present at birth and during the lying-in period;

3. the baby's physical, neurological and sensory status at two weeks of age as determined by examination;

4. potential or actual psychological stress in the mother or family; and

5. social and environmental conditions surrounding the child, mother or family.

In the months that follow, periodic reviews will reveal how the initial picture of the child and his family is modified by maturation and by the conditions and events of the family's life.

TABLE 1. Initial Diagnostic Battery:

Third Trimester of Pregnancy to Two Weeks

Area	Procedures	Data Gathered By:
A. Environmental and Historical Background of the Family		
1. Family Health History 2. Family School History 3. Family Resources	Family Resources Inventory*	Teacher
B. Pregnancy Data		
1. Medical Aspects of Pregnancy	Prenatal Inventory*	Public Health Nurse
2. Psychological Aspects of Pregnancy and Anticipation of the Parental Role	Pregnancy Outlook Inventory*	Teacher
C. Infant Characteristics		
1. Medical Aspects of the Birth	Postnatal Inventory*	Public Health Nurse
2. Examination of the Baby Health-Developmental Assessment		
a. physical assessment	Physical Examination*	Pediatrician
b. neurological assessment	Prechtl Neurological Exam of Newborns	Pediatrician
c. gross sensory screening	auditory and visual stimulation	Pediatrician
d. temperament and behavioral organization screening	Brazelton Neonatal Behavioral Assessment	Public Health Nurse
e. interim medical history	Interval History Questionnaire*	Teacher
f. sleep and feeding history	Sleep, Feeding, Crying Questionnaire*	Teacher/Mother
D. Case Conference (at two weeks)		
1. Summary	Initial Diagnostic Battery Summary	Diagnostic Team

*Constructed by BEEP Staff

D-7

The two week exam and the discussion following it begin the process of encouraging open easy communication between the Diagnostic Program staff and the parents; the teacher also participates in this session to begin the diagnostic-education-parent partnership philosophy.

Family pediatricians are notified of any abnormality that may be discovered in one of their patients during a BEEP examination. The project makes it very clear to parents that BEEP examinations in no way replace their usual visits to the pediatrician.

Following the two week examination a case conference is held to summarize information gathered in the initial diagnostic phase. The main intent of this conference is to share the composite information gathered so far with the BEEP personnel who work with this family. Thus, the teacher, pediatrician, public health nurse, and either the Diagnostic Program supervisor or Education Program supervisor attend this conference.

Any follow-up plans are made at this time. Often they consist of recommendations for different educational approaches to the family or to the child itself.

In the event that a potential problem has been noted, plans are made for close monitoring by the Diagnostic Program staff. If problems have been noted for which further diagnosis or medical treatment is recommended, we offer assistance to the family physician. If the family is not under regular medical care, we work with them to find the help they need. In all these cases, the resources available from the strong liaison with Children's Hospital Medical Center are invaluable.

Health, Growth and Development Reviews

To insure that no child goes through infancy and early childhood with an undetected handicap to learning these periodic reviews evaluate the child's status in those basic skills considered essential to educational or learning success in the broad sense of the terms. These skills have been grouped under four general headings: gross motor development, language development, perceptual-motor development, and personal-social development.

The strategy for evaluating development in these areas is twofold: 1. A survey is made of those physical, sensory and neurological systems which are prerequisite to the development of the basic skills -- in other words, a thorough physical examination evaluates the child's health, neurologic development and sensory functioning; and 2. the child's skills in each area are measured by a series of special assessment techniques drawn largely from standardized instruments.

The Health, Growth and Development Reviews take place at 3½, 6½, 11½, 14½, 24 and 30 months. The content of the evaluations varies in keeping with the child's growth but the general format is the same for all reviews. Table 2 summarizes the content of the reviews that are made

TABLE 2. Health, Growth and Development Review:

3½ months and 6½ months batterics

INFORMATION AREA	PROCEDURE	DATA GATHERED BY
A. Health, Growth, Motor Development		
1. Physical Assessment	Physical Examination	Pediatrician
2. Sensory Acuity Screening	At 3½ mo:	
	Vision Screening Exam	Pediatrician
	Initial Vision History-Family & Child	Public Health Nurse
	Initial Hearing History-Family & Child	Public Health Nurse
	Speech and Hearing Questionnaire-Child	Public Health Nurse
	Devel. Exam: Visual Perceptual Items	Devel. Evaluator
	Receptive Language Items	Devel. Evaluator
	At 6½ mo:	
	Vision Screening Exam	Pediatrician
	Hearing Screening Exam	Pediatrician
	Interim Vision & Hearing History-Child	Public Health Nurse
	Speech and Hearing Questionnaire-Child	Public Health Nurse
	Devel. Exam: Visual Perceptual Items	Devel. Evaluator
	Receptive Language Items	Devel. Evaluator
3. Neurological Screening	Neurological Examination	Pediatrician
4. Interim Medical History	Interval History Questionnaire	Public Health Nurse
5. Sleep and Feeding History	Sleep and Feeding Questionnaire	Mother/Teacher
6. Gross Motor Development	Items from Bayley Scales, Motor Section (supplemented)	Devel. Evaluator/ Pediatrician

Continued

TABLE 2. (con't.). Health, Growth and Development Review:

3½ months and 6½ months batteries

INFORMATION AREA	PROCEDURE	DATA GATHERED BY
B. Developmental Evaluations		
1. Overall Development	Bayley Scales of Infant Development and Denver Developmental Screening Test	Devel. Evaluator
2. Receptive and Expressive Language Ability	A modification of Receptive Expressive Emergent Language Scales* plus items drawn from Bayley Scales and Denver Develop'l. (suppl.)	Devel. Evaluator
3. Perceptual-Motor Ability	Items from Bayley Scales and Denver Developmental (supplemented)	Devel. Evaluator
4. Personal-Social Development	Items from the Bayley and the Denver plus observations during examinations	Devel. Evaluator
C. Case Review Conference		
Evaluation Summary Report for Parents BEEP Profile		Diagnostic and Education Staff

25

*Bzoch, K.R., and League, R. Assessing Language Skills in Infancy. Gainesville, Fla., Tree of Life Press, Inc., 1971.

26

at 3½ months and at 6½ months. The reviews made at later periods are quite similar, the main exception being that the appropriate developmental test items differ for each age.

At each of these periodic reviews we will be looking at the way in which the health history of the first year of life relates to the child's developmental adequacy and, ultimately, to the attainment of competence in school. The concept of at-riskness continues to play a role in our health monitoring of the infant. We are interested in the ways in which the infant may acquire at-riskness or reveal that he has overcome or circumvented complications that might have predisposed him to educational problems.

A continuing health inventory or interval history is obtained at each examination period. Health events are scored for their frequency, significance, and relevance to educational development.

The periodic reviews include physical examinations. Perhaps the most educationally relevant part of the physical assessment is the close monitoring of neurologic development. Viewing the two week Newborn Neurologic Examination as providing the baseline description of the infant, we perform further neurologic evaluations at each physical examination. Between the ages of 3½ and 6 months, many reflexes appear and/or disappear. A number of such reflexes are tested at both the 3½ and 6½ months periods to determine if their progression is appropriate for their age.

A further portion of the pediatric evaluation involves assessment of special sensory function. Evaluations of both hearing and vision occur during each physical examination, although special emphasis is given to each of these measurements at certain age levels. While very little is known about the screening of infants for both hearing and vision, BEEP medical personnel have reviewed the literature and assembled various measurements that provide some indication of function in these areas.

The developmental examinations at the 3½, 6½, 11½, 14½, and 24 month checkpoints are based primarily on the Bayley Scales of Infant Development and the Denver Developmental Screening Tests,* supplemented by items from other standardized scales as well as from detailed descriptions of normal development. These scales enable us to assess the child's skills in the four major development areas mentioned previously: gross motor, language, perceptual-motor, and personal-social.

The paucity of standardized procedures for evaluating very young children has led us to adopt the best available scales (the Denver and

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*Frankenburg, W.K., Dodds, J.B., and Fandal, A.W. Denver Developmental Screening Test Manual. U. of Colorado Medical Center, 1970.

*Bayley, Nancy. Manual for the Bayley Scales of Infant Development. N.Y.: The Psychological Corp., 1969.

the Bayley) and then to supplement these with inventories of our own or with modifications of relatively untried scales of others. The interpretation of results will naturally be influenced most by information from scales with established reliability.

From the periodic reviews we derive a picture of the child's pattern of development, strengths and weaknesses, and characteristic approach to tasks.

After the pediatrician and the developmental evaluator have completed their joint evaluation of the child, the information they have gained about his physical and developmental status is shared with the parents and with their pediatrician. Figure 4 shows an example of the way information is prepared for the parents. This form, which is given to the parents, provides a convenient starting point for discussions and for the airing of any concerns the parents may have.

Immediately after each health and development review, the pediatrician, the developmental evaluator and the family's assigned teacher hold a case conference to integrate the various findings from the particular evaluation. If the result suggests the need, a special plan of action is drawn up. Any potential problems are reviewed at the weekly meeting of the Diagnostic Team with the Pediatric Coordinator.

Current Status of the Program

In late summer Mrs. Hainsworth relinquished her supervisor role to devote more time to the expanding program of Project First Step (Warwick, R.I. Public Schools) which she had helped found and which she had continued to serve as co-director.

On September 1, 1973, Dr. Diana Kronstadt became Supervisor of the Diagnostic Program. She came to BEEP from the University of Florida and is experienced in the developmental evaluation of children in their earliest years.

Since BEEP babies (with one exception) have been born after March 1, 1973, the Diagnostic Team has been concerned primarily with examinations at the two-week, 3½ month and 6½ month evaluation points. In addition, they have been conducting the 14½ month evaluations of "comparison" children -- that is, children born in 1972 and therefore not eligible for BEEP. These children are evaluated by the same procedures that will be used with BEEP children when they reach the target age. Their data are required for the program evaluation analyses, as the evaluation section of this report will explain.

Fig. 4. - Example of a report for parents on the results of a 3½ month diagnostic and developmental evaluation.

D-13

Child's Name

Date 10/16/73

Evaluators Diana Kronstadt, Paul McCarthy, M.D.

I. Medical Examination:

Height 24½ Inches Weight 13 pounds 15 ounces

Physical Screening adequate Neurological Examination: adequate

Vision Screening: adequate

II. Developmental Examination

Gross Motor Skills: Firm, strong muscle tone; able to raise self with chest off mattress in prone position, sit with some support, held standing bears some of his weight. Head is balanced.

Language:
Receptive; responds to various sounds by searching for source - interested in language - watches lips of speaker.
Expressive: responsive babbled "conversation" - beginning to express and communicate moods.

Perceptual Motor Skills:
Emerging hand-eye coordination - able to actively manipulate different objects - Follow objects in space visually. could retain blocks - one in each hand.

Personal-Social Development:
Responsive friendly baby - visually oriented - maintained himself well throughout examination.

The record of examinations administered to date is as follows:

Type of Examination	No. of Cases
Two-week examinations	64
Modified two-week examinations for those who missed the recommended time span	9
3½ month evaluations	41
6½ month evaluations	7
14½ month comparison children examinations	31

As a result of BEEP's extensive physical examinations, eighteen infants were found to have problems that necessitated communication with the child's doctor or health clinic. While the problems differed in severity and some require only close monitoring in the months ahead, several were sufficiently serious to involve repeated contacts and follow-up calls to ensure that the children were receiving necessary treatment.

THE EDUCATION PROGRAM

Introduction

BEEP is committed to the idea that the family is the most important educational force for the young child. Consequently much of BEEP's work is with families, increasing their understanding of child development and sharing with them the design of home conditions that encourage the child's emerging abilities.

The educational philosophy underlying BEEP does not aim to accelerate or force children's development. Instead, it is oriented toward arranging for each child an environment rich in resources and in opportunities for him to exercise his natural talents.

During the current operational period when most BEEP babies have been under six months of age, the education staff has worked mainly to help parents grow in awareness of their babies' abilities and of some of the factors underlying their behavior. The staff is not wedded to any particular child-rearing theory or to any one viewpoint about how to raise children. Drawing upon their knowledge of child development they strive to be responsive to the needs and life style of the individual family. Through their experience in working with very young children, our teachers are able to suggest to parents a richer range of ideas and alternate ways of doing things than the family might think of, working alone. It is important, we believe, for the family to find effective ways that are compatible with their own abilities and preferences.

The Education Program is operating three different "packages of services," each of which was designed to represent a set of quality services that a community might reasonably consider adopting. The information gained from the evaluation of these three service levels will enable Brookline and other communities to weigh the considerable differences in costs against the benefits we find.

The sections that follow will make explicit the differences underlying the three service levels and will then describe the levels as they are now operating. A final section will deal with staff qualifications and training procedures.

Rationale

The Education Program of BEEP is concerned with the total child: his physical, his cognitive and his emotional adaptation. The following propositions influence the content and conduct of the educational activities:

1. Each child possesses at birth a unique repertoire of strengths and weaknesses which will change continually through the combined effects of maturation and experience.

2. Each child's growth and development can be observed, measured, and influenced at least as early as the moment of birth.

3. The primary facilitators of healthy development during the first three years of a child's life are the parents for they construct the social and physical environment in which the child will operate.

4. All children are basically curious and initially self-motivated to interact with the people and things they encounter.

5. Adaptation occurs through successive conditions of equilibrium as the child first assimilates new information to existing schemas and then accommodates to the new information.

6. Throughout the sensori-motor period (the period of immediate concern to BEEP), perceptual, motor, and cognitive learning occurs through concrete interaction between the child and the environment.

7. There are sensitive periods during the first three years of life during which the interaction between the child's developing abilities and the conditions imposed upon them by the environment is a particularly salient influence on the child's development.

8. Developmental milestones which are of primary importance include:

   - the establishment of a focused personal relationship which can provide satisfaction of needs, protection, affection, and guidance,
   - the onset of locomobility (crawling, walking),
   - the onset of receptive language (understanding spoken language),
   - the onset of expressive language (vocalizing, talking),
   - the development of learning-to-learn skills, the tools for solving problems.

9. These emerging abilities may be challenging but at the same time stress-provoking to those responsible for the child's care.

The Basic Services

As a prelude to explaining distinctions among the levels, we first

describe the basic services that BEEP provides to all enrolled families -- in addition of course to the diagnostic services which are identical for all.

The BEEP Center is the focal point for many educational services and activities. In its furnishings, for example, it serves as a model for homes with young children, illustrating ways to make living areas safe yet stimulating places for young children to explore.

Among the safety ideas exemplified in the Center are these: fire-resistant and fireproof materials, furniture without sharp edges and corners, safety caps for electrical outlets, safety shields for stoves and radiators, window guards, high-level locked cupboards for cleaning liquids and other dangerous substances, locked medicine storage chests, bathroom door latches out of children's reach. Being mindful of the range of incomes represented in our families, we have tried to eliminate common safety hazards through solutions that are both inexpensive and easily home made.

To illustrate how the home may be set up to provide the very young child with fascinating areas to explore, the kitchen of the Center has its lower cupboards stocked with plastic, wooden and metal containers and utensils that are free from sharp points and edges. Some pantries and closets at home can be similarly arranged to provide the infant with happy hours of manipulating and exploring new materials. Not an inconsequential advantage of such arrangements is that they permit the child to enjoy the company of the mother as she goes about her own activities in the home.

The playroom has been designed and equipped to be consistent with the theoretical view that maximum benefit to each infant can best be assured by providing materials and an environment that will stimulate his natural curiosity and offer him a variety of opportunities to practice and extend emerging abilities. Experiences in the Center also provide the infant with an effective introduction to social activities.

BEEP's collection of information and materials relating to children and family life has already been mentioned in an earlier section. These materials have been selected by the education staff to be of help in understanding, enjoying, and caring for young children. The toys in the collection have been chosen for their appropriateness for the abilities of children at different ages. (Lists of toys in the resource library are given in the appendix.)

The books, pamphlets and toys may be borrowed by parents to use at home. A limited stock of baby equipment such as baby seats and baby backpacks, are also available on loan.

The collection of films, slides and videotapes is accessible to

parents. A staff member is avialable to operate the projection equipment for them.

The Center is the scene of special events for all families: film showings, toy-making workshops, interesting guest speakers, and so on. Parents themselves suggest ideas for such events.

The Center is a place where parents may meet one another informally to swap ideas or just to make new friends. They are encouraged to feel at home, to add their own suggestions and discoveries to the resource library and the family areas. Free transportation is provided to enable families to use the Center.

Whenever parents come to the Center either to browse or to attend special events, their preschool children are cared for in the nursery and playroom supervised by an experienced teacher. The Center teacher becomes a familiar friend to each child, providing continuity from one visit to the next. She knows the children by name, knows their developmental levels and special interests. Before each child's visit, she selects appropriate materials or toys to have available for the child. The Center teacher's manner of showing respect for the child as an individual and her ways of interacting with the child in play can serve as informal models for parents.

A further function of the Center is to offer limited child care to the participating families. BEEP realizes that the strain and even the tedium of having total responsibility for a very young child are stressful to many mothers. By providing a safe and interesting place to leave babies, BEEP offers occasional periods of welcome relief.

Each BEEP family is assigned a member of the education staff, a trained teacher who acts as their "liaison." This teacher is the person who has primary responsibility for maintaining contact with the family. She helps them find any information they want and keeps them informed about events planned at the Center.

These teachers have also accepted the responsibility for explaining to the families our reasons for gathering various kinds of information and for conducting the different examinations. For example, at the first contact with a family, the assigned teacher explains the basic design of the program, the three service levels and the fact that families are randomly assigned to a given level. At each subsequent step in the BEEP program their teacher explains to the family why the procedure is desirable or why the information is needed. Each of these encounters is an opportunity for parent learning.

These then are the <u>basic services</u> which BEEP provides to all families. By way of summary, the main points are that parents are able to:

- drop in at the Center whenever they like, bringing along their children who are cared for by trained staff in a specially equipped playroom,
- explore the materials about early childhood and child care that are assembled in the "resource center,"
- borrow books, pamphlets and toys,

- view films and video tapes on child development and health topics and related aspects of childhood,
- attend special events such as workshops, film showings, or programs with interesting speakers,
- use the free transportation service to and from the Center,
- borrow ideas from the living room, playroom and kitchen areas and adapt them for use in their own homes,
- use the Center as a place to get acquainted with other families who have children the same age,
- call upon their specially assigned teacher for information or help,
- learn about other resources for young children in the Boston area--recreational, educational, and medical.

All BEEP services are free.

The Three Service Levels

By taking the basic services and adding home-and-center educational programs, BEEP has derived the three service levels mentioned earlier. Levels differ mainly in the frequency of planned educational meetings. This table summarizes the differences:

	Unlimited Use of Center Facilities	Scheduled Home-and-Center Education Programs
Level A	Yes	Maximum frequency
Level B	Yes	Minimum frequency
Level C	Yes	None

Taking into account the fact that all levels receive identical diagnostic and referral services, the service package offered at any level is a quality program that is expected to have significant advantages for the child. Even Level C is a reasonable model for a community in that it offers a first-class diagnostic program and a resource center that parents may make use of as they please.

Families are assigned to levels by a random process that is unrelated to preferences or needs. Randomness is required by the evaluation procedure that will later measure the benefits of the different service levels.

Families from all three levels are included in each teacher's caseload. For this reason any differences in effectiveness that may later be found among levels cannot be attributed to differences in teacher skills.

The frequency of seminars and home visits varies somewhat with the age of the child and with the needs or desires of the family. Table 3 is an overview showing how the services vary over time for the different service levels.

The educational meetings for parents are primarily of two types: 1) small groups of parents whose children are about the same age meet at the Center for discussion of various aspects of the developmental changes that occur in children at a given age; and 2) then their teacher comes to the home of each family and talks with parents about their own child's development, his individual strengths, and some ideas for activities that might be appropriate for him. In this manner the home visits tie in with the group discussions.

The content of the meetings and home visits changes over time since it is correlated with the maturation and experience of the children. For example, during the early months of the child's life, one function of the Education Program has been to increase the parents' observational skills and awareness of their own behavior toward the child. This is done in an individualized and personal way as our teachers observe with the families their babies' growth, mark their new achievements and emerging abilities, and support the establishment of early smooth routines of healthy care.

Sometime after the middle of the child's first year, the stresses placed on the mother increase (see White and Watts*). It is from this point that mothers seem to become differentially effective in meeting the developmental needs of their infants. Stress may stem from several sources. Stranger anxiety may make it difficult for the mother to leave the child with another caretaker even for short periods of respite. It is during these months also that the baby is learning to control his body. The process of learning to crawl, to cruise, to walk and finally to climb and to run offers new scope to the child's curiosity and ability to explore. It also offers new dangers -- electric outlets, appliance cords, swinging doors, and other enticing hazards.

During this period the education staff shifts emphasis from

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*White, Burton L., and Watts, Jean C. Experience and Environment: Major Influences on the Development of the Young Child. Vol. 1, Englewood Cliffs, N.J.: Prentice Hall, Inc. 1973.

TABLE 3
OVERVIEW OF DIFFERENTIAL SERVICES FOR THREE LEVELS OF THE EDUCATION PROGRAM

Service Level	Age	Home or Center Visit with Teacher	Parent Seminars	Center Activities	Child Care Unrelated to BEEP Activities	Child Care Related to BEEP Activ.	Center Access Use of Lib. Resources
A	Prenatal	As many as necessary to recruit and gather information relevant to BEEP	1 lecture/month 1 related discussion/month	Approximately 1 planned activity per month	3 two hour sessions/month	unlimited	unlimited
	0-6 mo.	Every 2,3 or 4 weeks according to family need and/or desire	"	"	"	"	"
	7-18 mo.	Every 2 or 3 weeks according to family need and/or desire	"	"	"	"	"
	19-30 mo.	Every 3 weeks	"	"	"	"	"
B	Prenatal	As many as necessary to recruit and gather information relevant to BEEP	1 lecture/month	"	2 two hour sessions/month	"	"
	0-6 mo.	Every 6 weeks	"	"	"	"	"
	7-18 mo.	Every 4 weeks	"	"	"	"	"
	19-30 mo.	Every 4 weeks	"	"	"	"	"
C	Prenatal	As many as necessary to recruit and to gather information relevant to BEEP	None Access to videotape of lecture	"	Only in trade for child-care services	"	"
	0-6 mo.	None	"	"	"	"	"
	7-18 mo.	None	"	"	"	"	"
	19-30 mo.	None	"	"	"	"	"

developing the mother's observational skills to helping her understand and cope with the child's new needs and abilities. She is encouraged to give the child access to as much of the house as possible so that there may be maximum opportunity to exercise curiosity and explore the world. The baby-proofing ideas demonstrated in the Center and the opportunities provided there for babies to explore safely become topics for the parent and teacher to examine with reference to application in the baby's home. Ideas about ways to respond, to initiate interaction, and to foster language development are topics in the continuing dialogue between parents and teacher.

During this period we may see developmental deviations beginning to appear in some infants. Through coordination with the Diagnostic Program and appropriate consultants, we work with the families of such children to devise remedial experiences for them.

Staffing

The first requirement for BEEP's teachers is that they must themselves be mothers. This requirement arose from the strong recommendations of parent advisors during the planning period. Their point was that they had little respect for the advice of childless "experts" who had no firsthand experience in the day-to-day care of very young children.

The teachers have all had training in child development and in working with young children. While many of them have graduate degrees, it was felt that a warm personality and uncommon common sense were more important qualifications than were academic credits.

All teachers receive an initial period of training at BEEP. This process is facilitated by the fact that only one or two new teachers are added at a time to the already experienced team. Each new teacher is paired with a veteran for orientation purposes and indoctrination in BEEP procedures. In addition the training process is facilitated by studying videotapes of BEEP teachers carrying out various functions such as interviews, home visits, parent discussion groups. Because evaluation purposes of BEEP require extensive record keeping, each new teacher is thoroughly indoctrinated in the necessity for keeping up-to-date records of all family contacts. A reading program, staff seminars, and individual sessions with the Education Supervisor prepare the new teacher for her role with BEEP families.

As an aid in training new teachers and other new staff, a chart was drawn up to show explicitly which staff members are responsible for each type of contact with the families and for maintaining project records. The chart is reproduced at the end of this Education Program section. Although, as a training aid, the chart contains minor references to terms or steps not described in this report, it may nevertheless be helpful in conveying a sense of the chronological sequence of events associated with families in BEEP.

Training for all teachers is an on-going matter. Biweekly meetings of the education staff are devoted to discussion of strategies for handling problems that may have arisen, to reviewing and critiquing videotapes of BEEP procedures, to discussions of the changing skills of the BEEP babies and of appropriate ways of responding to them. Curriculum sequences, developmental guidelines and supplementary materials help the teachers plan home visits geared to the developmental status of the individual child and to the expressed concerns or questions of the parents.

Each teacher is scheduled for at least one meeting each week with the program supervisor. During this period she reviews the status of each family in her care, reflects on activities that have transpired in home sessions, and plans with the supervisor for further sessions.

At the present time, BEEP has seven teachers (three full-time and four part-time). In addition to their home visit schedule, they share responsibility for parent seminars and other events at the Center.

A full-time teacher has a case load of about thirty families. This means that in order to have trained teachers available for new family enrollments, teacher recruiting and training are on-going functions of the administration.

Current Status of the Education Program

For several reasons the series of parent seminars planned around developmental topics was not inaugurated with families during the babies' first two or three months of life. In the early weeks of adjusting to the new baby's presence, some mothers experienced physical discomfort or fatigue that limited their interest in attending parent seminars.

In addition, the first period of a family's enrollment was a busy time in which the BEEP staff was in frequent contact in order to gather background information, to explain BEEP service levels, and to conduct examinations of the newborn baby. A seminar schedule on top of those demands seemed unwise during this period of adjustment for most families.

Through these early contacts with families, we found that parents showed a strong interest in knowing and understanding BEEP's objectives and programs in some depth. Thus the content of seminars with parents changed from topics of early development to those about the BEEP program itself. It became clear that one of the primary goals of the early period must be to enable parents to establish a clear understanding of us and our procedures. It is as vital for them to understand us as it is for us to understand the family and the baby.

This fall we have begun a seminar schedule with outstanding speakers. These are held in the evenings for the greater convenience of the parents. A few days after each seminar, informal morning meetings are held for small groups of A-level parents to pursue some of the ideas and issues that emerged from the seminar. The table on the next page shows the schedule of meetings planned for the fall. Parents and staff will join in evaluating the success of this plan.

Oct. 9, 1973	8:15 P.M.	T.Berry Brazelton, M.D.	"Individual Differences in Infants; A Cross-Cultural Look"
Oct. 11, 1973	10:30 A.M.	BEEP Teaching Staff	Discussion of the Lecture
Nov. 20, 1973	8:15 P.M.	M. Edward Keenan, M.D.	"Accidents - How They Happen, Where They Happen - and Ways to Prevent Them"
Nov. 29, 1973	10:30 A.M.	BEEP Teaching Staff	Discussion of the Lecture
Dec. 4, 1973	8:15 P.M.	Burton L. White, Ph. D.	"Dimensions of Competence in Children, 0-3"
Dec. 6, 1973	10:30 A.M.	BEEP Teaching Staff	Discussion of the Lecture

TABLE 4.

Family/Staff Interactions

I. Initial Phase (Enrollment Decision):

A. Initial inquiry (phone call, post card, visit to Center):

1. Inquiry is referred to teacher.
2. Teacher enters family name in record book of potential families.

B. Follow-up initial inquiry:

1. Teacher makes initial contact
   a. does family mobility questionnaire to determine elegibility,
   b. explains 3 program levels (A,B,C).
2. Teacher writes comments about contact (or contacts) in "Potential BEEP Family" notebook.

C. Family is not enrolled if:

1. Not interested in BEEP,
2. Baby is too old,
3. Not Brookline or eligible Boston residents,
4. Planning to move away,
5. Unwilling to commit to any random level assignment (exceptions are possible).

D. If family decides to enroll:

1. Teacher gets a level assignment from Research Assistant and tells family.
2. Teacher submits family mobility form to Research Assistant.
3. Research Assistant creates:
   a. file card with address, phone number,
   b. research file for family.

E. If family withdraws from BEEP:

1. Research Assistant removes all records to "Drop-out" file.

II. Prenatal Phase:

A. Teacher:

1. Schedules appointment for Pregnancy Outlook interview preferably in the 8th month of pregnancy for all mothers (A, B, C levels).
2. Conducts interview, records results, and asks parents to call BEEP when baby is born.
3. Puts Pregnancy Outlook in research in-box.

B. Research Assistant:

1. Checks Pregnancy Outlook form for completeness and files it.

C. Nurse:

1. Schedules and does prenatal inventory for all families:
   a. at Center at same time as Pregnancy Outlook if scheduling permits or
   b. at home or at Center at another time.
2. Records results of prenatal inventory.
3. Obtains parent's signature on medical authorization form.
4. Discusses diagnostic aspects of BEEP.
5. Puts records in research in-box.

III. Neonatal Phase:

A. Family notifies BEEP that baby is born.

B. Teacher:

1. Sends parent a congratulatory card.
2. Gives birthdate and name of child (if known) to Research Assistant.
3. Notifies nurse of birth of child.
4. Schedules Brazelton exam at home for 7th or 10th day.
5. Notifies Parent Coordinator of birth of child.

C. Research Assistant:

1. Enters birth information on:
   a. yellow card,
   b. family mobility sheet,
   c. IDB summary sheet.

D. Parent Coordinator:

1. Enters birth data on Diagnostic Chart.
2. Sends letters to family's obstetrician and pediatrician.
3. Puts a memo re: family doctors' letters in files.

E. Nurse and Teacher go to home for Brazelton Exam: All levels.

1. Nurse conducts the exam.
2. Nurse interprets the infant's specific responses for the mother.

F. Teacher and Parent Coordinator:

1. Schedule an appointment for 2 week physical and Newborn Neurological Exam at Center.
2. Make necessary arrangements for:

a. child care at Center for siblings at time of 2 week physical,
b. transportation to and from Center,
c. teacher to accompany driver, if desired.

IV. 2 Week Examination:

A. Administration at Center: All levels (A,B,C)

1. Teacher takes Sleeping, Feeding, Crying History
2. Pediatrician gives Newborn Neurological Exam
   a. nurse explains exam to parent (s)
   b. teacher is present for exam.
3. Pediatrician gives 2 week physical exam
4. Doctor evaluates baby's responses and discusses his/her findings with parent(s).

B. Record Keeping:

1. Nurse records medical findings and deposits records in research in-box.
2. Teacher gives completed Sleeping, Feeding, Crying History to Research Assistant.

V. Case Conference (All Levels: A,B, and C)

A. Preparation:

1. Teacher:
   a. reviews Pregnancy Outlook,
   b. reviews IDB Summary sheet,
      (1) up-dates IDB summary where needed,
      (2) insures that there is an entry for each category,
   c. records "ideal level" for family on IDB summary sheet,
   d. records "anticipated BEEP impact on family" on IDB summary sheet.

2. Nurse:
   a. reviews information in research folder
   b. up-dates and annotates records, where needed.

B. Case Conference:

1. Is held immediately following 2 week examination.
2. Pediatrician, nurse, teacher are present.
3. Teacher requests presence of others, if advisable.
4. Specific program goals for family are discussed and recorded.
5. Decision is reached on how often each A-Level family is to be visited; i.e. every 2, 3, or 4 weeks.

C. Record Keeping:

1. Nurse writes:
   a. medical findings on conference summary sheet

2. Teacher writes:
   a. goals for family,
   b. general impressions in education folder,
   c. specific goals, where indicated, in research file.

VI. Ages 2 weeks to 6½ months:

A. A-Level Families:

1. Medical and Developmental Examinations:
   a. at 3½ months
   b. at 6½ months

2. Home Visits:
   a. every 2, 3, or 4 weeks as decided according to family need and/or desire.
   b. includes Sleeping, Feeding, and Crying History at ages 6 weeks and 3½ months, and at other times at discretion of the teacher according to individual situations.

3. Parent Seminars:
   a. once every month
   b. discussion group, related to monthly seminar

4. Use of toy lending library

5. Use of book and pamphlet resources

6. Access to all BEEP personnel

7. Access to Center activities, e.g. workshops, films, videotapes

8. Use of Infants' playroom

9. Child Care for infant and any siblings
   a. during infant exams
   b. unlimited child care related to BEEP activities
   c. and up to three additional two-hour sessions per month.

B. B-Level Families:

1. Medical and Developmental Examinations:
   a. at 3½ months
   b. at 6½ months

2. Home Visits
   a. 1 visit every 6 weeks
   b. Sleeping, Feeding, and Crying History is done at about age 6 weeks and at other times at the discretion of the teacher.

3. Parent Seminars
   a. one seminar per month
   b. no BEEP discussion groups planned

4. Use of toy lending library

5. Use of book and pamphlet resources

6. Access to all BEEP personnel

7. Access to Center activities, e.g. workshops, films, videotapes

8. Use of Infants' playroom

9. Child care for infant (and any siblings)
   a. during infant exams
   b. unlimited child care related to BEEP activities
   c. up to two two-hour sessions per month.

C. C-Level Families

1. Medical and Developmental examinations
   a. at 3½ months
   b. at 6½ months

2. Home Visits
   a. none scheduled
   b. Sleeping, Feeding, and Crying History is done at 2 weeks, 6 weeks, and 3½ months. This will entail a special home visit at the age of 6 weeks.

3. Parent Seminars:
   a. none
   b. access to video-tapes of Parent seminars held for A and B levels.

4. Use of toy lending library

5. Use of book and pamphlet resources

6. Access to all BEEP personnel

7. Access to Center activities (workshops, films, video-tapes)

8. Use of Infants' playroom

9. Child care for infant (and any siblings)
   a. during infant exams
   b. unlimited child care related to BEEP activities
   c. on a cooperative exchange basis with other parents.

VII. Age 7 Months to 18 Months

A. A-Level Families:

1. Medical and Developmental Examinations:
   a. at 11½ months
   b. at 14½ months

2. Home visits:
   a. every 2 or 3 weeks, according to family need and/or desire

Items 3 to 9 as in Section VI for 2 weeks to 6½ months of age.

B. B-Level Families:

1. Medical and Developmental Examinations
   (as described above for A-Level families)

2. Home visits:
   a. every 4 weeks

Items 3 to 9 as in Section VI for 2 weeks to 6½ months of age.

C. C-Level Families:

1. Medical and Developmental Examinations:
   (as described above for A-Level families)

2. Home visits:
   a. none scheduled.

Items 3 to 9 as in Section VI for 2 weeks to 6½ months of age.

EVALUATION PROGRAM

Introduction

The Brookline Early Education Project has many faces: it is a service program, it is a research project, it is a social change agent. To evaluate its effectiveness in each role requires different approaches and information-gathering procedures.

BEEP's highest priority is to influence the lives of children -- to deliver them into elementary school with fewer health problems and fewer learning problems than if they had not been in the program. The evaluation of this goal requires a complex research design that will yield information on the similarities and differences between BEEP children and comparable children not enrolled in BEEP.

In addition, documentation of BEEP's impact on the families, the schools, the pediatric profession, and the community at large is being accomplished by less formal data-gathering methods. Various running tallies, systematic observations and chronological records contribute to the assessment of effects in these areas.

Both approaches to evaluation are described in the following paragraphs.

Child Effects

The research program has three main tasks:

1. to compare BEEP children with non-BEEP children in terms of health and development at four points in their lives: at 14½ months, 30 months, entry into kindergarten, and second grade;

2. to compare the three service levels of the education program in terms of costs and benefits for the children and families;

3. to determine in retrospect which of the diagnostic instruments (singly or in combination) were most effective in predicting subsequent growth and learning handicaps.

In order to obtain a baseline description of children who have not had BEEP services, children born in 1972 are being recruited to take the physical and developmental examinations that will be given to BEEP children when they reach 14½ months and the later evaluation points.

These non-BEEP children are identified here as "comparison" children

rather than "control" children because their parents are given the same examination results and referral services that are available to BEEP children. This disclosure of physical and developmental information constitutes a limited service and therefore the term "control" in the conventional sense is inappropriate.

Children born in 1972 whose parents consent to their examination are assigned to one of two groups (I and II) on the basis of odd or even birth dates. They are examined at the points indicated by X's in this table:

Group	Approx. number	14½ months	30 months	Entry into kindergarten	Second grade
I	90	X	X	X	X
II	90		X	X	X
III	90			X	X

The third group (III) shown will be drawn from those entering kindergarten who have not been involved in any way with BEEP.

From this pool of comparison children, samples will be drawn to compare with the BEEP children at the four evaluation points. Further rationale and details of the research design will appear in a separate document on evaluation that is in preparation.

Statistical considerations inherent in the analyses make certain demands on the functioning of the programs. As we mentioned earlier, they require that families be assigned to service levels on a random basis. They also dictate in a sense the minimum size of the BEEP sample if meaningful comparisons are to be made over the four major evaluation points. The number 225 emerged as an acceptable starting sample size, given that the inevitable attrition rates remain fairly constant over the time period.

To insure high quality data for the analyses, the research team has taken an active role in helping design instruments for systematically organizing and recording the many classes of data collected in BEEP. For example, they have worked closely with the diagnostic and education teams on the design of the Initial Diagnostic Battery and many other data-collection forms. These forms have been arranged to simplify the recording process for those serving the families and to facilitate the coding of the information for computer processing.

The research team also assumes responsibility for monitoring the recording of information to insure that it is accurate, complete and consistent. Their monitoring extends as well to operating procedures in order to safeguard the integrity of the evaluation design and the con-

fidentiality of the information. In carrying out these activities, the goal has been to minimize the intrusion of evaluation procedures into the daily functioning of the service programs.

Cost Benefit Information

The evaluation team has responsibility for overseeing the cost-benefit and cost effectiveness aspects of the project. A set of budgetary procedures was devised to facilitate the allocation of each item of expenditure (staff salaries, resources/materials, physical plant facilities) to the appropriate category. The resulting figures will enable us to assess the operational costs of the diagnostic program, the three services levels of the education program, start-up activities, and program evaluation.

Secondary Effects

BEEP's influence on the family, the pediatricians, the schools, and the various other communities with which it interacts can be estimated by a variety of surveys, questionnaires, and tallies. For example, the drawing power of a library book can be estimated from its loan history relative to that of other books in the collection. Similarly the attractiveness of items in the toy library can be measured from records of use. A brief evaluation form completed by parents when returning each toy or book, adds useful information for determining the attractiveness or utility of loan items.

Records are maintained on a broad range of variables. Some of the areas being covered and examples of the data being collected are indicated below:

- attractiveness of education program elements: measured by frequency of attendance at group seminars, comparison of attendance figures at different kinds of seminars, attitude surveys;
- parent participation in BEEP: measured by frequency of visits to Center, use of loan materials, attendance at seminars and special events, use of child care service, frequency of phone calls to assigned teacher, data on broken appointments for physical and developmental examinations or home visits;
- recruiting methods: effectiveness estimated from parent reports of how they learned of BEEP;
- public response to BEEP: tally of daily visitors to the Center, both local and out-of-state; record of special visits from professional groups; count of inquires received by mail and sorted into class of inquiry; record of requests for BEEP speakers and for interviews with BEEP staff; requests for articles and professional reports on the BEEP programs; requests of local universities to

place students with us for practicum experiences; references to BEEP in professional publications; requests for help in setting up similar programs in other communities;

- medical response to BEEP: referrals of patients to BEEP, requests for information on diagnostic procedures, borrowing of reprint collection on early childhood, requests for BEEP speakers at medical meetings and training seminars.

In a comparable manner information is kept that will shed light on BEEP's relations with the local community, the minority groups, and the school system.

Some of this information is tracked by the research team. Some is part of the documentation being maintained by the project historian.

Many of these records are obviously relevant to the long-term, summative assessment of BEEP's diverse impact. But many also have a short term or formative evaluation function in providing continuous feedback on the effectiveness of our procedures or programs and enabling us to adjust our activities or to channel our efforts into more productive areas.

Brookline Recruiting Methods

In the early months, recruiting remained a low-key effort because the tasks of staff training, furnishing the Center, obtaining loan library supplies had to take precedence.

Increasing evidence of Brookline's declining birth rate, however, made it clear that an extensive program of recruiting would have to be inaugurated.

From the records of our first thirty-eight families, we learned that the majority came to BEEP because they had heard of the project directly from an individual -- a doctor, a staff member, a school counselor or teacher, or a parent already enrolled in BEEP. Mass mailings of letters to parents and doctors, we found, were ineffective. One significant piece of data was that if a pregnant woman contacted BEEP, she without exception enrolled in the project.

These data pointing up the importance of personal contacts had a determining influence on the nature of the recruiting campaign.

One of our prime objectives in recruiting has been to reach a representative cross-section of Brookline. We want to minimize the self-selection process that would give us an excess of those who are education-oriented and are actively seeking opportunities of this nature. Therefore we are employing a variety of methods that will help us reach families who are unlikely to seek us out. Some strategies involve our contacting parents directly; others require our working through other agencies.

For the record of our own progress, and for the guidance of other communities interested in starting early education programs, we report the measures taken to inform the community about BEEP and to invite their participation in recruiting. A brief listing of the groups and individuals whom we have contacted is as follows:

1. Obstetricians and pediatricians. Believing that many pregnant women will not join BEEP without the approval of their obstetricians, we have worked hard to acquaint the medical community with BEEP's objectives and especially with the diagnostic program. The task has been made doubly difficult by the extraordinary number of doctors that deliver and care for Brookline babies. (School records show that about 150 pediatricians care for Brookline's approximately 400 kindergarten children.)

Following our own evidence on the importance of personal contacts and the advice of our medical consultants as well, we have pursued a campaign of personal calls and follow-up visits with doctors who deliver or care for the majority of Brookline babies. BEEP staff members have personally visited or talked by phone with obstetricians and pediatricians. For the most part their response has been encouraging and supportive. They have displayed BEEP brochures and posters in their offices and they are referring mothers to the project. (Their reactions to personal contact confirmed our conclusions about the ineffectiveness of the previous mass mailing effort.)

2. Elementary school guidance counselors, nurses, kindergarten teachers. Each school was visited to explain BEEP to staff members who were most in contact with younger mothers of the district. Brochures and posters were left with each of them.

3. Parents of kindergarten children. Two strategies were followed to meet these parents:

a) BEEP staff attended spring registration of prekindergarten children and spoke individually with parents about BEEP asking them to mention it to expecting friends;

b) staff members visited the schools or school bus stops where mothers congregate at noontime to wait for their returning kindergarten children; at these times it was easy to talk informally with the mothers about BEEP;

4. Brookline High School students. Because many high school students are baby sitters and therefore often know of families expecting again, contact was made with them through their guidance counselor and they were asked to keep us informed of pregnant mothers they knew.

5. Brookline Clergymen's Association. BEEP staff, including the Director, attended a weekly luncheon meeting, explained the BEEP programs and furnished brochures for the ministers to give to BEEP prospects. Several clergy asked us to provide statements for inclusion in their monthly church bulletins, and this was done.

6. Brookline Health Department and Brookline Mental Health Clinic. Directors of both organizations have been most supportive of BEEP's recruiting efforts. Both display posters and brochures in their waiting areas.

BEEP's Director and several staff attended a weekly meeting of the BMHC staff and enlisted their help on recruiting strategies

and in acquainting us with the individual characteristics of Brookline neighborhoods. The staff has been invariably helpful in providing leads to groups engaged in childbirth education as well as to other resources in the community.

7. Brookline Welfare Department. BEEP's Director and several staff members met with the director and social workers, and received valuable assistance in locating other resource agencies and in recruiting among families and single mothers in their caseloads.

8. Park and Recreation Department play groups. BEEP staff visited play groups and recreation centers where teachers were most willing to help in distributing brochures and information about BEEP to expectant mothers.

9. Play groups in private homes. As we learn of the locations of these private playgroups, staff members arrange to visit them to describe BEEP to the group leader and to find out if any mothers are expecting.

10. Nursery schools and day care centers. Over a dozen of these have been visited to enlist the cooperation of their staffs in calling BEEP to the attention of mothers who are expecting again.

11. Head Start Program. The teacher's help in informing mothers about BEEP was enlisted and brochures were provided.

12. Moms and Tots Program at the Brookline Art Center. Three mornings a week, mothers and their children between two and four engage in craft and artistic activities together. BEEP staff visited these groups and asked the mothers' help in telling friends about BEEP.

13. The Women's Educational and Industrial Union of Boston. The Family Day Care Services department of this institution help women who are seeking day care for their children while they work; many requests for help come before the babies are born. The Director of the service offered to refer Brookline women to BEEP and to distribute brochures to them.

14. Visiting Nurses Association. BEEP staff members have explained BEEP's programs to visiting nurses who have promised to mention it to the pregnant women they encounter in their work.

15. Well-Baby Clinic, hospital clinics. BEEP's nurse and nursing student have enlisted the help of clinic nurses who serve pregnant women and infants. They have visited St. Elizabeth's Hospital, Boston Lying-In Hospital, Harvard Community Health Plan clinic, Children's Hospital clinics, and many other, leaving brochures and posters where appropriate. Several groups of nurses from these institutions arranged visits to the BEEP Center.

16. Posters distributed. The BEEP poster has been placed in the Brookline Public Library and in a number of maternity shops where Brookline mothers buy baby clothes and supplies.

* * *

In the section below about the families who are enrolled in BEEP, we report figures indicating the effectiveness of the various recruiting methods. Successful tactics will be continued in the months ahead. Two BEEP mothers will soon begin part-time work to maintain contact with the most frequently used obstetricians, pediatricians and area clinics. Another part-time staff member is working to enlist families from Brookline's Chinese community.

Boston Recruiting Methods

Black and Hispanic families from Boston are being recruited through established organizations in their neighborhoods.

Fundacion Puente has provided assistance in reaching Hispanic families and in helping us understand the problems of the Spanish communities of Boston. Our own Hispanic staff has worked to inform eligible families of BEEP's advantages and to facilitate their visits to the BEEP Center. They have also prepared translations of the BEEP brochure and descriptive materials.

Through the efforts of Dr. Irving Williams, Medical Director of the Martha M. Eliot Health Center, BEEP has been able to focus recruiting efforts in this important community health clinic, located in the Bromley Heath housing project and serving thousands of families in a crowded area adjacent to Brookline.

A BEEP room has been established at the Health Center and furnished as a recruiting area. A part-time community worker is coordinating the enrollment of families. A small loan library of books and toys has been set up to make it easier for the BEEP families living in that area of the city to borrow and return materials.

The recruiting of Black and Hispanic families is proceeding on schedule. Our goal is to enroll about sixty families - that is, about one fourth of our total sample.

Families Enrolled

While recruiting efforts have stressed enrollment before or during the third trimester of pregnancy, we have accepted some children after birth but none after the age of three months.

Our only eligibility requirements are that families have no definite plans to move out of the area and that they are residents either of Brookline or of Boston.

Figure 5 shows the number of families in the project each month through September, 1973. By the end of September, 31 Boston families and 96 Brookline families were participating in the program. At that time 86 families had had their babies; the rest are expecting before the end of this year.

In initial contacts with the families we asked how they had learned of BEEP. The following answers were given with the frequency indicated:

Another BEEP Parent	24
BEEP Staff	18
Brookline Schools	9
Community Agency	12
Martha Eliot Health Center	14
Medical Contacts	17
Newspaper Articles	19
Miscellaneous (friend,poster, brochure)	14

These figures helped us identify our most productive sources of recruits. Personal contacts were most frequently cited but there was some evidence that newspaper articles and posters contribute to the final decision to join the project.

Breakdown of these data into monthly subtotals shows that BEEP parents are now our most productive source of new families. The trend of referrals from them is steadily upward.

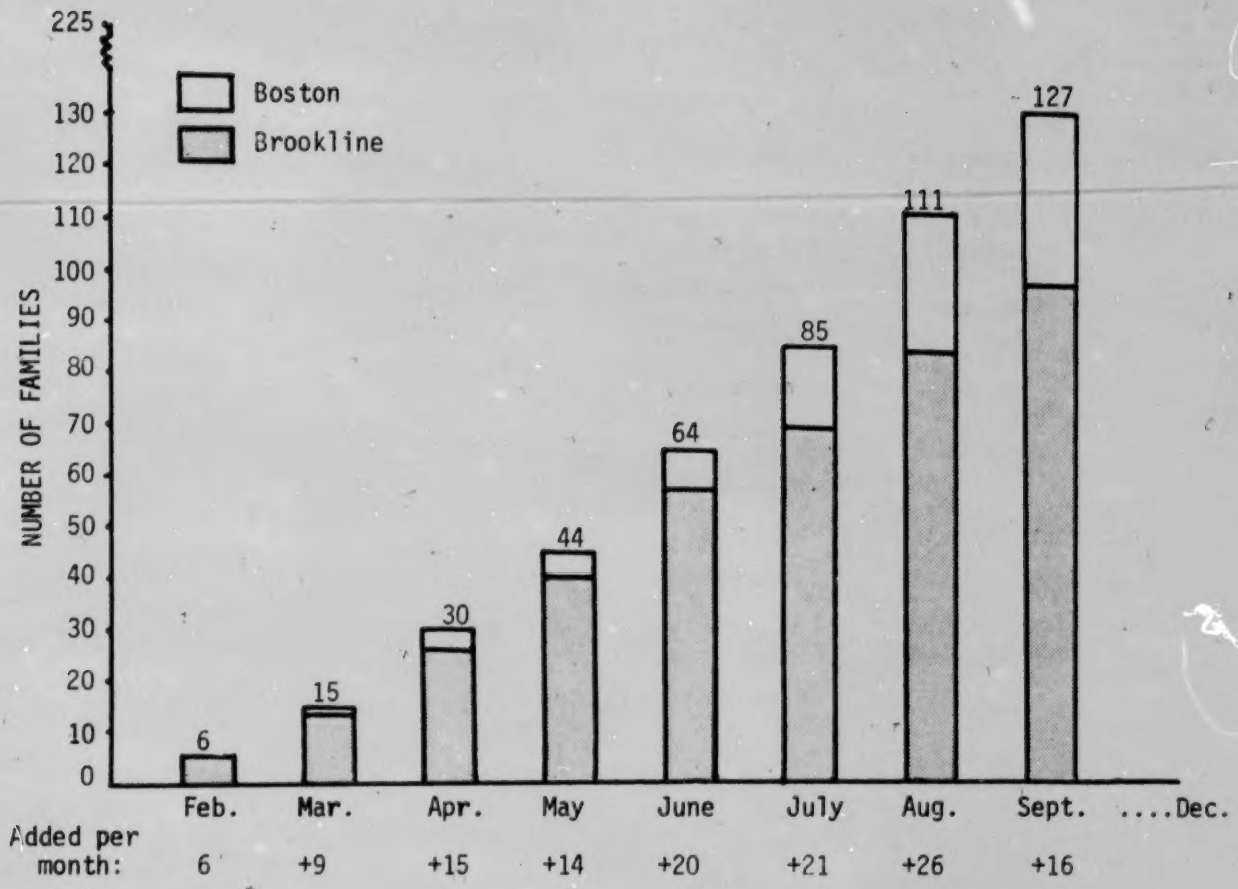

Fig. 5. Cumulative record of family enrollment. The vertical bars indicate the total number of families in the project at the end of each month. The figures beneath the bars show the number of new families added each month.

OUTREACH EFFORTS

On widely different fronts BEEP staff members worked to acquaint individuals and groups with the purposes and programs of BEEP. On the local level, these efforts were designed:

1) to acquaint citizens with the nature of BEEP's programs in order to build a wide base of community support and good will;

2) to encourage the enrollment of expecting families; and

3) to explain details of the BEEP programs to those segments of the community that might fear BEEP's possible encroachment into their spheres of activities -- nursery schools, pediatricians, municipal agencies.

On the national level, outreach efforts are necessary if BEEP is to exert an influence beyond the local community. Professional groups (education and pediatric) and communities considering the adoption of early education programs can perhaps build on our experiences and procedures.

The outreach efforts of the year are briefly summarized here:

. newspaper articles were prepared for the local newspaper as well as for release to the general press; general information handouts, brochures and posters were produced;

. special meetings with kindergarten teachers presented BEEP speakers in programs on early childhood education;

. regular meetings with Brookline kindergarten teachers began laying the foundations for the adoption of educational practices that will make the transition to public school smoother for BEEP children;

. information meetings were held with the elementary principals of Brookline and with the Administrative Council, composed of the top administrators, curriculum-area supervisors, and housemasters of the Brookline public schools;

. regular meetings were held with a select committee of special educators and school personnel to plan the long-term evaluation of BEEP children when they reach school age and to prepare to begin feasibility testing on a limited scale this winter;

. monthly newsletters were sent to the Superintendent of Schools and to the School Committee to keep them informed of BEEP's current status;

- BEEP staff met with all psychology classes at the High School on several occasions to present films and lead discussions about infant development;

- the guidance counselors of the Brookline schools held two meetings at BEEP to learn about the programs and to suggest ways in which they could help recruit families for BEEP;

- programs on early childhood and on BEEP were presented by BEEP staff at the invitation of several teacher-training colleges in the Boston area;

- a continuing outreach program for the physicians of Brookline has as its objectives the enlisting of their help in recruiting pregnant mothers and in exchanging information after BEEP diagnostic examinations of their patients;

- the Medical Task Force of BEEP's Professional Advisory Committee has worked to inform the physicians of Brookline about BEEP through personal contacts, introductory letters and brochures, and an open house at the BEEP Center;

- BEEP's Pediatric Coordinator has presented a discussion of BEEP's diagnostic procedures before various medical groups and medical societies;

- BEEP's Pediatric Coordinator has explained the BEEP program to various nursing seminars and has proposed that experience in the BEEP diagnostic program be part of the training of nurses;

- BEEP has compiled a collection of reprints on recent pediatric studies, developmental evaluation, and early childhood research and has made loan copies available to local obstetricians, pediatricians and other physicians;

- BEEP staff have participated in weekly training sessions of the Community Child Health Division of Children's Hospital whose program for pediatric fellows has been designed to provide broad experience in community medicine and especially in those areas concerned with education;

- BEEP personnel have presented programs for the Family Health Division and for the Child Development Unit at Children's Hospital, and for the staff at the Harvard Community Health Center;

- BEEP personnel have described the project in a number of TV and radio programs that have had both local and nation-wide exposure;

. papers about the BEEP programs in general or reports on selected aspects have been presented at professional conferences and have been submitted to professional journals.

Many of the recruiting strategies previously described have served an outreach function also and have helped to make the project known throughout the community.

PUBLIC RESPONSE

Inquiries coming into the BEEP Center show that the project has been mentioned in the press throughout the nation. The articles describing BEEP are far too numerous to list here but those which have brought the greatest number of inquires are: The New York Times (Feb. 11) Behavior Today (Feb. 19), The Washington Post (July 7, syndicated widely), The Boston Globe (Aug. 26).

Educational journals and several TV and radio programs are also cited by inquirers as their source of information on BEEP.

To date there have been 365 professional inquiries asking for information about BEEP programs and procedures. In addition, applications for jobs with BEEP have been received from over 400 individuals.

The number of professional educators requesting permission to visit BEEP and to receive special briefing on the programs has grown to such an extent that we have had to limit them to certain days of the month in order to protect our staff's time.

We have received professional educators from Canada, England, Scotland, Russia and Japan and from universities or state departments of education in Florida, Rhode Island, West Virginia, Texas, South Carolina, Vermont, Massachusetts, New Hampshire, New Jersey, New York, Maryland, Michigan, Colorado, Illinois, and California.

While the response of these educators is gratifying, it is reaching the state of becoming a burden on an already over committed staff. The numerous requests for detailed manuals for the Diagnostic Program and for the education curriculum pose questions concerning what our role should be in providing information for educators.

MAJOR CONCERN: RATE OF FAMILY ENROLLMENT

During the first operational year there was a continuing focus on the rate of family enrollment. BEEP initially set a very high goal of recruiting 225 families between March and December, 1973. Several factors have hampered attainment of this goal.

1. Declining birth rate -- The 1973 birth rate for Brookline was projected at 30 to 35 per month. The average birth rate per month has actually been about 25.

2. Timing -- The final trimester of pregnancy, at which time BEEP aims for enrollment, is an anxious time for many mothers. Several have been reluctant to volunteer until the baby has been born and is a few weeks old.

3. Obstetrician Reaction -- Brookline obstetricians have been a primary recruiting source but relatively few women have enrolled as a direct result of their obstetrician's referral. Obstetricians have certainly been cordial to our outreach but they profess little interest in following the baby, have very few eligible Brookline or Boston patients, and have no vested interest in the referral.

4. Staff Capacity -- The time required to equip our Center facility, to train the diagnostic-pediatric and education staff and to develop a supportive public reaction made it doubtful that we could have absorbed families at a faster rate even if they had come forth.

It now appears that we will enroll about 175 families who are expecting babies by the end of December. We regard this as a successful approximation to our original goal, but it is short of that goal. There appear to be five options:

1. Accept families who have had children born since March 1 but who did not enroll earlier. This option would be cheapest but we would lose the ability to determine whether our early examinations can make important later predictions.

2. Enroll more families in the remaining months who do not reside in Brookline. This would require altering the evaluation plan to follow children into their school years.

3. Settle for the smaller sample size of about 175. Unfortunately, even with the stipulation that families not enroll if they plan to leave the area in the next five years, few families really know whether they will move; very few own their homes and the ten per cent per year projected attrition may be too low.

4. Extend the deadline for expected birth date beyond January 1. This option does prolong our program, and therefore ultimately increases cost. However the cost during the present funding period would not be affected and the quality of the program is likely to be enhanced by the steady intake rate.

5. Extend the deadline and, in addition, strengthen the evaluation design by including up to 275 children, with about 100 children born after January 1. Children born after January 1 would enter school a year later than the children now enrolled in BEEP. This option would enable evaluation of the effects of BEEP on two groups of children as they enter school during successive years but it would also increase our costs and program load substantially.

BEEP staff, advisors and consultants have concluded that the fourth or fifth options provide the most desirable courses of action. We have decided to ask the supporting foundations for their counsel in this regard.

At the present time we are conducting a survey of all Brookline families who had children born during June, July and August but did not enroll in BEEP. We are particularly interested in discovering the reasons why eligible families did not join -- whether they didn't know about the program, whether they felt it was not suitable for some reason, or whether they plan to move from Brookline in the near future. This information will help us adjust our recruiting strategies and will also help other communities who may start similar programs.

SIGNIFICANT ACCOMPLISHMENTS

Significant progress has been made, we feel, in three areas of concern which had remained unresolved in the planning year: 1) the nature of our collaboration with Children's Hospital; 2) our ability to recruit and genuinely serve Black and Hispanic families from Boston and 3) our ability to function within the school system and to serve project needs through the established channels.

Children's Hospital Link

One of the more significant achievements of the year has been the development of a strong working relationship with the Children's Hospital pediatricians. This association is all the more gratifying because during the planning year it had remained rather tenuous. Although Dr. Julius Richmond, Chief of Psychiatric Services, had wholeheartedly supported BEEP and had committed Children's Hospital to a partnership arrangement, this commitment could bear fruit only if pediatricians could be found who had a strong interest in BEEP's objectives and the commitment to collaborate on the many medical aspects of the Diagnostic Program.

Fortunately, in the fall of 1972, Dr. George Lamb and Dr. Melvin Levine of Children's Hospital were organizing a new division of pediatric training: the Community Child Health Division. They were developing affiliations with various community centers where special training in community pediatrics could be arranged for the division's post-residency pediatricians. During the previous year, Dr. Levine had already begun an active affiliation with the Brookline Public Schools and knew of the BEEP plan. Thus it was natural that the Community Child Health Division and BEEP should come together in a mutually beneficial arrangement. BEEP contributes to pediatric fellowships and the Community Child Health Division contributes the crucial pediatric support to BEEP.

Through arduous hours of working together over the design of diagnostic procedures and through daily contacts in serving BEEP families, the pediatric staff and other BEEP staff members have developed a genuine partnership. Dr. Levine devotes part of each week to coordinating and supervising the pediatric work; both he and Dr. Lamb take an active role in the larger planning and policy issues of the project. They have been able to tap the vast medical resources of Children's Hospital on BEEP's behalf, especially in consulting medical specialists on relevant aspects

of the Diagnostic Program and in assisting BEEP babies who need special attention.

Of particular value has been a close tie also with the Child Development Unit of the hospital, whose staff helped the BEEP staff in development of techniques for evaluating maternal-infant interactions and such functional areas as sleep and feeding. This unit has assisted also in the training of the BEEP pediatric staff.

The strength of these ties between BEEP and Children's Hospital gives us an increased potential for effecting changes in the interface between the professions of pediatrics and education. This is especially important in view of the increased frequency with which pediatricians are being asked to advise on functional school problems. The Outreach Efforts section of this report mentions some of the efforts already made in promoting an exchange of information across traditional professional boundaries.

Martha Eliot Health Center

Another vital accomplishment which BEEP has realized this year is the liaison with the Martha Eliot Health Center. The Health Center is located in the Bromley Heath Housing Project area of Boston, which is very near the Brookline-Boston boundary. Through the coordination and support of Dr. Irving Williams, Medical Director of the Martha Eliot Health Center, more than 25 prospective families have been referred to BEEP, a network for following-up medical concerns of BEEP families has been established, a community worker/family advocate maintains daily communication between Martha Eliot and BEEP, and a BEEP room has been set aside at the Health Center for conferences, some examinations, and display of materials.

Representatives of the Martha Eliot Health Advisory Committee and BEEP staff members have exchanged visits on several occasions to gain greater mutual understanding. In this community where the economic and medical needs of many families are severe and where suspicions of exploitation by previous research projects are still very much alive, we have to recognize, frankly, that BEEP can at best make only a modest contribution. Nevertheless, we are committed to making the best possible effort.

Operating Within the School System

We have been learning how to operate an early education program within the school system, subject to established constraints of rigid accounting and payroll procedures, civil service requirements for secretarial staff, and town purchasing procedures. These were often aggravating and resulted in unexpected delays. At the same time we had to recognize that the new program's urgent start-up needs and scores of purchasing orders fell as an extra load upon town and school departments whose work was already unusually heavy because of school construction and renovation projects.

At the same time we came to recognize the advantages of operating under the protective wing of an established respected institution of the community. This opened doors to us that would have remained closed to an unaffiliated project.

In addition, numerous school personnel, from the Superintendent to custodians, gave freely and cheerfully of their time to help us in countless ways.

* * *

Many concrete accomplishments have been described in this report but it would be remiss not to mention the building of a strong project organization as a critical accomplishment of this first year. A dedicated, well-qualified staff has been assembled from the large number of candidates that are available in today's job market. We have attempted to be highly selective, particularly with regard to interpersonal qualities, and believe that this has helped us survive the challenge of moving the program from an outline of goals and tentative schedules to a functioning reality.

THE YEAR AHEAD

In BEEP's second operational year, we expect to be concerned with the following new or continuing efforts:

1. Education Curriculum -- As the BEEP children grow older, the education curriculum will play an increasingly important role in our educational efforts. We will continue to plan for the highest quality and replicability, while reviewing the relevance of our procedures to major goals.

2. Cost-Benefit Levels -- We are continually monitoring the operation to ensure that the minimal education program is worthy, attractive and potentially significant, that the maximal effort is fiscally within reach of communities ready to replicate BEEP, and that the three programs differ significantly in cost.

3. Social Service Component -- We are finding an increased need for social service support and for an expanded referral network with community agencies in order that BEEP families with social service needs beyond the scope of BEEP gain necessary help.

4. Family Privacy -- We are working to evolve recording procedures that will safeguard the anonymity and confidentiality of information about BEEP families. (See draft of Statement of Informed Consent in Appendix.)

5. Physical Facilities -- Some of the planning and administrative functions of BEEP will be shifted to a nearby location so that more of the present facility can be devoted to use by participating families.

6. Evaluating Impact on the Schools -- Work on our plan for collecting multi-faceted data on the school performances of present Brookline kindergarten and second grade children will continue and pilot studies will be conducted.

7. Evaluating Impact on Medical Personnel -- The plan for collecting data on the impact of BEEP upon BEEP medical personnel will be completed and data collection will begin.

8. Rapport with Medical Community -- Guidelines are being prepared to document our efforts toward maximizing communication and minimizing potential conflicts with family pediatricians.

9. Parent Involvement -- We expect to provide more frequent and varied opportunities for parents to participate in the planning and conduct of BEEP policy and events.

10. Proposals for Renewed Funding -- Proposals will be prepared to seek support for extending the present diagnostic and education services for the BEEP children through to entry into kindergarten.

11. Interdisciplinary Collaboration -- We will continue working to ensure that the diverse orientations and viewpoints of the many staff, advisors, and consultants serve to strengthen the program operation.

APPENDIX

List of Contents:

Staff Biographical Sketches
BEEP Professional Advisory Committee
Explanation of the Newborn Neurologic Examination
Education Program - Toy Lending Library
Statement of Consent

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EXPLANATION OF THE NEWBORN NEUROLOGIC EXAMINATION

The neurologic examination administered to infants at the Brookline Early Education Project is a systematic observation of the baby's nervous system. This examination was developed by Dr. Heinz F.R. Prechtl in Holland. It is now being used extensively for very young infants both in Europe and the United States.

Through the nervous system a baby senses and responds to the world around him. A careful observation of this body system is an essential part of any infant examination, and the procedures developed by Dr. Prechtl provide the most thorough examination currently available.

The examination attempts to describe a baby's activity in an organized way, including how active or inactive the baby is, how responsive the baby is to various kinds of stimuli, and how excitable the baby is. This is done through close observation by our pediatrician and nurse of the baby's reactions, reflexes and muscle control, and the way in which these are affected by the baby's state of alertness.

It is important to realize that the results of this examination cannot be interpreted as clearly abnormal, average or superior. Nor is it true that this examination predicts intelligence, personality, or emotional stability in the baby. Instead, findings on this first examination can provide a starting point to help us understand the baby's growth patterns. For instance, in later months or years this and subsequent neurologic examinations will provide useful reference points in considering how the baby adapts to such routines as bowel training, feeding, and sleeping.

Many babies cry during the examination. This is certainly a normal response to being examined at an early age. In fact, the crying helps us describe the baby's responses to various stimuli. The exam is not harmful in any way. In order to keep the conditions of each exam approximately the same, we do request that the baby be fed approximately one to two hours before the exam and that parents sit quietly during the exam. The nurse will describe the procedures as the doctor goes along.

After the examination, you may want to know more information about your baby. We will describe our observations to you, and we encourage you to ask questions of the pediatrician. Since this is the first BEEP exam and it describes ranges of behavior, the answers we give you will be general. You could expect answers to such questions as: Does the baby seem to have the normal reflexes, muscle control and strength of a newborn? How responsive is the baby? How does the baby's state of alertness affect the way he functions? It is very unlikely that this first examination will lead to any specific recommendations of immediate medical or educational treatment. If we should observe any serious problem we would explain it to you and inform your pediatrician, and we would help you take any further action.

In summary, the newborn neurologic examination should provide a helpful beginning to understanding the way a baby functions and relates to the environment. To be useful and accurate, this understanding will have to be built up over a period of many months, with several different observations. We will be reviewing the baby's development at each future examination.

BROOKLINE EARLY EDUCATION PROJECT

EDUCATION PROGRAM

TOY LENDING LIBRARY

Compiled by:

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DRAFT - MARCH 1973

BROOKLINE EARLY EDUCATION PROJECT

Introduction

A primary purpose of toys, as we see it, is to provide an invitation to action. The purpose of this booklet is to suggest toys that do this and which children enjoy. The toys we have selected have been grouped to match the abilities and interests of infants at different ages and at different stages of development. Skills which are normatively emergent at each age have been defined and toys have been selected which should provide opportunities to practice and to extend them.

Some cautionary notes are in order. First, many, if not most of the "toys" of the early years are things frequently found about any home: cardboard boxes, wooden spoons, crinkly paper and the like. We in no way minimize their importance! Realizing, however, the resources, both time and money, which are currently being spent on commercially produced toys, we felt an obligation to make some specific recommendations. Our list is by no means comprehensive. It is only suggestive. It is hoped that our specified toys and our toy criteria will be useful in helping parents to extend the list to match toys with their own child's particular interests and abilities.

Second, the toys we have suggested are usually not restricted to the age range suggested. A good toy, among other things, is one which is enjoyed again and again in a variety of ways. We feel that these toys will all meet that criteria.

Finally, the most critical test of a toys' effectiveness is the child's pleasure in using it. As children vary, so will they respond differently to different toys. They are the final judge of toy's effectiveness for them.

The toys listed herein will be stocked in the B.E.E.P. toy lending library. In order to organize the library efficiently for parents' use, the toys have been grouped at three month intervals during the first year of life and at six month intervals during the second year.

Criteria for Toys

Activities and materials used in the program will be selected because they are deemed to be:

1. play-oriented and hence disposed to lead to maximal enjoyment and sustained attention on the part of the infant

2. novel enough to maintain attention

3. variable

4. instrumental in strengthening the nucleus of schemas and concepts that the infant already has and in leading to new understandings

5. successful in involving active participation on the part of the child

6. of quality design in terms of:

   a. durability
   b. appropriate use of color and design (for example, infant toys will use bright colors and well-defined designs for visibility) and early focus
   c. not easily broken or disassembled

7. of safe design in terms of:
   a. no sharp edges or pointed parts
   b. parts that cannot be pulled apart in vigorous play (eyes of stuffed toys, fragile mobiles hanging within reach, whistles that come out, etc., must be avoided)
   c. no strings or springs which can constrict or pinch baby

8. washable

9. not too inconvenient or onerous to Mother, e.g. very loud noises, tremendous mess, etc.

10. something that the child can play with independently, i.e. that does not require adult strength and coordination to operate.

Kitchen Utensils

plastic measuring spoons
metal measuring spoons
plastic cup measurers
metal cup measurers
plastic sugar and flour scoops
wooden sugar and flour scoops
wooden mixing spoons
spatula
plastic cookie cutters
aluminum pie pans
pots and pans
cookie sheets
cupcake pans
pot and pan lids
egg beater
plastic and wooden bowls of various sizes
plastic and metal funnels
strainers
orange juice makers
plastic calender

Paper Products

cups
plates
baking cups
straws
plastic spoons

Kitchen Items-Odds and Ends

napkin holder
plastic bread basket
plastic ice cube trays
plastic clothes sprinkler
plastic soap dish
plastic dishpan
plastic and metal pails
plastic pot scrubbers
plastic bottle caps
oven gloves
pot holders
washcloths
hand towels
dishtowels
dish rags

milk cartons of various sizes
plastic milk bottles of various sizes
egg cartons of various sizes
paper towel rolls
cereal boxes
cracker boxes
food cans, e.g. paprika cans, coffee cans, cocoa cans
plastic food containers with and without lids e.g. ice cream containers

cardboard cartons of various sizes
paper bags
cigar boxes
boxes that wax paper, aluminum foil and sandwich bagies come in
empty oat meal boxes
plastic bottles with screw on tops.

Bathroom Equipment

plastic soapdish
plastic toothbrush holder
metal and plastic shoe horns
plastic bottles of various sizes
toilet paper rolls
tissue paper boxes
cosmetic tray
toothbrush

Characteristics of infants 0 - 3 months of age for which toys would be appropriate.

The infant:

1. Passively sees an object which is placed in his line of vision, i.e. "side positioned" and at an appropriate height at which the infant can focus.
2. Actively looks at an object which is placed in his line of vision, i.e. "side positioned" and at an appropriate height at which the infant can focus.
3. Follows a moving object which is placed in his line of vision.
4. Discovers his hands.
5. Responds to hearing a sound by looking.
6. Responds to interesting sights and sounds by gross bodily movements.

According to the above characteristics the following toys were selected as appropriat for infants 0-3 months of age.

1. Playtentials Series One
   - A. Bat and Ball Feel Toys - two different-shaped, large-surfaced, colorful objects placed in the infants line of vision.
   - B. Faces and Forms Mobiles - a mobile which is attractive to the infant, i.e. large surfaces, bright colors, and different patterns, and can be placed within the infant's line of vision.
   - C. Mirror - a mirror which is placed within the infant's line of vision.
   - D. Animal Grabbie - an interesting-shaped object placed in the infant's line of vision which helps the infant discover his hands.
   - E. Find-me-mitts - mittens which help the infant look at his hands.
2. Friendly Faces Mobile- A mobile which can be placed in the infant's line of vision and is attractive to the infant because of its bright, colorful interestingly-shaped faces. It also provides the infant with something interesting to look at while he listens to music.
3. Kenner Plastic Bird Mobile- Two light-weight mobiles which move with a slight breeze or movement of the object to which it is attached.
4. EDCOM Flip Book - a book which contains bright, colorful pictures with patterns that increase in complexity from page to page. It can also be attached to the side of the crib.

5. Wooden Chimes - a mobile which makes noise with a slight breeze or movement of the object it is attached to.

6. Sears Butterfly Placque - a placque which has interchangeable contrasting patterns for the infant to look at which can be attached to the side of the crib.

CHARACTERISTICS OF INFANTS 3-6 MONTHS FOR WHICH TOYS WOULD BE APPROPRIATE.

The Infant:

1. Reaches for object in his field of prehension.
2. Grasps objects.
3. Looks at objects he has grasped.
4. Mouths objects.
5. Manipulates objects, i.e. Palming and Fingering.
6. "Motor Recognition" of familiar objects.
7. Makes interesting sights and sounds last.
8. Adapts schemas in response to unfamiliar objects.
9. Becomes aware of feet.
10. Teethes.
11. Rolls over.
12. Creeps.
13. Enjoys bath.

According to the avove characteristics, the following toys were selected as appropriate for infants 3 - 6 months of age.

1. PLAYTENTIALS SERIES TWO:

   A. The Handi-Pal:
      A Toy suspended over the crib which has multi-colored hands the infant can reach up and grasp, makes noise upon contact.

   B. Color Play Windmill:
      A Windmill suspended over the crib which is operated by a bar the infant reaches for and pulls down.

   C. Play Chimes:
      A Bell suspended over crib which makes sounds upon contact.

   D. Trapeze Teether and Exerciser:
      Trapeze suspended over crib for infant to reach up and grasp, bar designed to be gumming bar.

   E. Pull-Me-Up:
      Bar attached to side of crib which the infant can use to pull himself up to a sitting position.

2. Cradle Gym: A Toy with two rings and a bar suspended over the crib which the infant can reach up and grasp.

3. Busy Crib Gym: A Toy with two rings and a bar suspended over the crib which the infant can reach up and grasp. When bar is pulled, it cause music to play and a Merry-Go-Round to start.

4. Hanging Balls:
   Five multi-colored Balls which can be attached to side of crib. Makes wood sound upon contact. The Balls are small enough for infants to hold in one hand and they can also be mouthed.

5. Activator:
   Toy with two hanging Balls suspended over crib which the infant reaches up and pulls down. When he does this, he causes a bell to ring and a wood block to be hit.

6. Finger Exerciser:
   A Toy that gives infant fingers a chance to push, pull, slide, and turn.

7. 3 Hardwood Rattles:
   One Bell Cube, One Wooden Man whose head moves from side to side, and One Wooden Stick whose parts move from one end to other end.

8. Tube Rattle:
   A Clear Plastic Tube easy to manipulate that has 5 metal Balls inside that move around.

9. Kindertoy:
   Four small brightly colored objects for manipulation, A Cone Shaped Object, A Small Ball, A Cube, and a Roll Rattle.

10. Small Wooden Vehicles:
    Can be held easily by infant, good for manipulating.

11. Bell Rollers:
    Small Object with Bells inside, will roll away a little from infant and therefore stimulate the infant to reach for it and go after it, will also makes noise when shaken or banged.

12. Wally Kick A Tune:
    Toy suspended over crib designed to stimulate kicking. Makes music when kicked.

13. Thumpy Kick Toy Exerciser and Find-Me- Booties:
    Toy suspended over crib above infants' feet, designed to stimulate kicking booties to help infant become aware of his feet.

14. Happy Apple-A roly poly chime toy which will return to upright position when pushed over.

15. Jumping Jack-Toy suspended on side of crib. The infant pulls ring down and arms and legs of toy move up and down.

Note:
It was decided that teething toys would not be bought for the Toy Lending Library because of health reasons.

CHARACTERISTICS OF INFANTS 6-9 MONTHS FOR WHICH TOYS WOULD BE APPROPRIATE

1. Begins to solve simple problems.
2. Uses a known response as a means for obtaining a specific goal.
3. Can see effect of own actions.
4. Sees relationship between own actions and external events.
5. Becomes interested in putting small objects into large objects.
6. Becomes interested in and focus on the characteristics of objects.
7. Becomes interested in parts of objects.
8. Begins to have thumb-forefinger opposition.
9. Reaches persistently for toy out of reach.
10. Looks for dropped toy.
11. Begins to look for hidden objects.
12. Begins to imitate sounds and gestures.
13. Sits firmly.
14. Begins to crawl, forward or backward motion.
15. Pulls self up to stand.

1. Busy Box:
   Toy which attaches to crib, has different objects for infant to manipulate. The infant can do something to all of the objects, i.e. Spin a wheel, twist a knob, turn of crank, push a button.

2. Xylophone:
   Infant can make sounds.

3. Surprise Box:
   A toy with five different things for infant to manipulate, i.e. push a button, move a dial. When infant does something an animal face pops up.

4. Baby Chimes:
   Baby whicls three colorful wheels to make music.

5. Milk Bottle and Hammer Set:
   A plastic milk bottle for infant to explore concept of "in and out." A Hammer for infant to manipulate, and practice his schemes, i.e. Shaking, banging.

6. Milk Carrier:
   Set of Six Plastic Milk Bottles with caps for infant to put on and take off. Small objects can also easily be put in bottle and taken out.

7. Wooden Vehicles:
   2 Wooden Vehicles the infant can manipulate and push easily along a surface.

8. Creative Blocks:
   Eighteen different shaped colorful blocks with a hole in the middle of each. Infant can manipulate blocks and poke the hole in the blocks with their fingers.

9. Giant Rock-A-Stack:
   Ten different colored rings, good for manipulating.

10. Clutch Ball:
    Ball with convoluted surface for infant to grip, will roll out of infant's reach to stimulate the infant to reach for it, creeps after it etc.

11. Clear Ball With Toy Inside:
    Toy inside spins around as ball moves.

12. Tupperware Hexagonal Ball:
    Pull apart ball with different shaped blocks to put in ball. Outside of ball has different shapes for blocks to be put in. Good for finger manipulation.

13. Creeper Rollers:
    Two bright plastic wheels with hardwood spokes. One contains a chime cylinder and the other is a rattle. Encourage creeping after and reaching for.

14. Animal And Cage Assortment:
    Cage with animal inside. Encourages looking for hidden object and putting little things into large things.

15. Baby Drum Drop:
    A Drum on one side, a drop box on the other. Encourages looking for a hidden object and also infant can hear effect on own action.

16. Curiosity Box:
    A Box that has two holes on top. When a Ball drops in one of the holes it come out in one of two places, side or bottom of box. Encourage looking for hidden objects and seeing effect of one's own actions.

17. Telephone:
A telephone to manipulate which encourages imitativeplay. (Princess & Traditional style).

18. Activity Box:
A toy that can be attached to the side of the crib which has 10 different things for infant to do.

19. Shake 'n Roll Rattle:
Plastic rattle that is shaped like an egg timer.

20. Baby Action Ball:
Clutch type ball with axial hour glass in center that contains beads.

21. Pushing:
A toy with five sliding rods which rolls on floor. Enclurages infant to crawl after it.

22. Rubber Balls:
Three different sized rubber balls.

CHARACTERISTICS OF INFANTS 9-12 MONTHS OF AGE FOR WHICH TOYS WOULD BE APPROPRIATE

1. Begins to anticipate events independent of own actions, i.e. the infant anticipates that his mother will leave when he sees her put her coat on.

2. Begins to acquire intentionality of behavior, i.e. drops and throws objects.

3. Begins to differentiate means from ends, i.e. sets aside an obstacle in order to reach for some desired object.

4. Searches actively for hidden objects (provided he has observed the object being hidden).

5. Begins to acquire objectivity in regards to space, i.e. the infant moves his head from side to side in front of an immobile object to examine its various perspectives, he becomes increasingly aware of heights, becomes increasingly interested in putting smaller objects into larger objects.

6. Begins to acquire objectivity in regards to causality, i.e. the infant will push away a spoon containing food he doesn't want.

7. Becomes increasingly interested in the characteristics of objects.

8. Playfully repetes own actions.

9. Begins to imitate new sounds and gestures.

10. Begins to imitate familiar words.

11. Begins to understand single words.

12. Acquires pincer-grasp (i.e. is able to pick things up with thumb and forefinger).

13. Can change from prone to sitting position.

14. Begins to creep.

15. Walks with support.

According to the above characteristics the following toys were selected as appropriate for infants 9 - 12 months of age.

1. WOBBLY BALLS AND TRAY-four brightly colored balls and a tray with colored sections to match, the balls are weighted so that they wobble about without rolling out of reach.

2. SCHOOL BELL CHIME-Infant sounds the chime by ringing toy as a bell or rolling it on the floor.

3. NESTING BOWLS-8 brightly colored bowls for stacking.

4. BUILDING CUPS-12 colorful building cups that stack or nest.

5. HANDY BOX-set of six colorful unbreakable containers that nest or stack, with or without their lids.

6. CLOWN STACK-eight graduated plastic rings with post and rocking base.

7. NOK-OUT BENCH-a wood pounding toy. When infant pounds peg in hole on top of bench another peg pops out of end of bench.

8. COBBLERS BENCH-wooden bench with mallet and eight large pegs. Both sides used for pounding.

9. PLAY CHIPS-set of 40 hardwood chips in 4 different shapes and colors. Each shape has its respective storage chamber in a plastic holder.

10. WALKER CHAIR-a chair or wheels to be used by beginning walkers. The infant can pull himself up by holding on to the back of the chair and then walk along pushing the chair.

11. RIDING STOOL-a stool with wheels which the infant can sit on, ride on or walk along pushing it.

CHARACTERISTICS OF INFANTS 12-18 MONTHS OF AGE FOR WHICH TOYS WOULD BE APPROPRIATE

1. Is inventive in solving problems, i.e. pulls a string to get attachted toy.
2. Repeats and varies movement which leads to interesting results i.e. dropping, throwing, rolling, sliding an object.
3. Imitates new movements connected with parts of the body which are not visible to the child i.e. opening and closing mouth, patting top of head.
4. Increasingly imitates familiar words; later imitates unfamiliar words.
5. Becomes interested in spatial relations among objects e.g. stacking objects, putting objects into containers and then removing them.
6. Becomes increasingly aware of causality between events i.e. infants request parents to do things for them that they cannot do for themselves. e.g. unscrewin the lid of a jar.
7. Can point and identify a few parts of the body, i.e. nose, eye, hair.
8. Can do simple picture puzzles.
9. Becomes interested in picture books.
10. Begins to walk steadily.
11. Can pull toy while walking.
12. Creeps upstairs and downstairs.

According to the above characteristics the following toys were selected as appropriate for infants 12 18 months of age.

1. THE NOTION BALANCE FIGURE-A toy with two pegs that each have three rings to put on them.
2. STACKING DISC-A stacking toy with four poles and many of the same sized discs.
3. PEG SORTING BOARD-A sturdy natural wood board with two playing sides and an assortment of 25 pegs in 5 lengths and 5 bright colors.
4. 8 CYLINDERS-A wood board with 8 cylinders of differents heights and diameters that fit in board. Each cylinder can fit into one of two depressions, but no two heights are the same.
5. SHAPE SORTING BOX-15 wooden blocks of five different shapes; each of the holes in the top of the box accept only one particular shape.
6. SHAPE SORTING BOARD-A wooden tray with sliding cover. There are three basic shapes in three different colors, and four sizes of each which fit in tray.
7. FRUITS I LIKE-Puzzle with 4 clearly identifiable large pieces.
8. MY BABY PETS-Puzzle with 4 large pieces.
9. PLAY PEN BOOKS-Set of 3 picture books made of foam filled vinyl, soft and squeezable, washable.
10. PAT THE BUNNY-Book for baby with things to do on each page i.e. pat the bunny's fur, look into a mirror.

(More books will be ordered.)

D. Pierson
Draft - 10/73

BROOKLINE EARLY EDUCATION PROJECT

STATEMENT OF CONSENT

Having been informed of the nature of the diagnostic services, of the education services, and of the research purposes of the Brookline Early Education Project, I understand that:

1. There is no charge for any of the services which the Brookline Early Education Project has agreed to provide.

2. Information collected on my child or my family for the Brookline Early Education Project will be kept strictly confidential among Project personnel. In reporting the results, no names or information that would reveal the identity of any person or family in the Project will be used.

3. Medical and educational test results on my child will be discussed with me to my satisfaction.

4. The Brookline Early Education Project will not attempt to obtain any medical record on my child or my family from any physician or hospital without specific written permission from me.

5. No medical or educational test results on my child will be furnished by the Project to any physician, hospital, educational institution or other agency without specific written permission from me.

6. No photographs or videotapes taken of my child or my family in conjunction with the Brookline Early Education Project will be used for public purposes without specific written permission from me.

7. Although the program is planned to continue throughout my child's preschool years, I am free to discontinue participation at any time.

With the above understanding, I consent to participate in the Brookline Early Education Project.

_____
Signature

Witness_____ Date_____